Editorial Comment

Tying agreements inadvisable though legal

The tendency of many manufacturers to make special agreements with their customers whereby the customer is obliged to purchase—for example with each half dozen bottles of perfume one gross of face powder of the same make—is considered unlawful by the OPA. This practice, OPA claims, is a violation of the basic principle that the requirement to purchase one product as a condition for the sale of another constitutes an unauthorized *rise in price.*

As we have stated in these columns before, there are many lines that are topheavy; new items being added at various times to serve as a selling basis, around which an advertising or promotion campaign may be developed. These items, unnecessary certainly at the present time, are slow-moving products. Many manufacturers have discontinued their production for the duration in order to have a greater number of containers and packages for their faster-moving items, but there are still others that hang on to the old items and force them upon the dealer.

Although it is true that women, due to increased number in industry, are spending more and more on cosmetics, they are just as careful and practical as ever about their actual needs. A little more leeway may be allowed at the present time for the luxuries but a careful survey has shown that the essentials are the items in demand. Consequently, if for no other reason, it would be wise as a container conservation measure to throw out these forced items, at least for the duration.

According to law, this practice is held to be legal provided, of course, that all customers are treated alike. However, the OPA has ruled against it, and although no test case has been brought to the courts, the consensus seems to be that a company would be wise to abide by the decision of OPA.

Toothpaste makers to protest AA-5 rating and L-317

The toothpaste manufacturers are going to bat in regard to the AA-5 rating and also in regard to their treatment under L-317, as amended March 24th. This order cuts their quantity of boxboard from 80 to 70 per cent of the base period. As we go to press there is in the offing a meeting between the OPA and the manufacturers in an effort to compromise on some of the undue burdens placed upon the industry.

the American Perfumer and ESSENTIAL OIL REVIEW

COSMETICS · SOAPS · FLAVORS

EST. 1906

HARLAND J. WRIGHT, *Editor and Publisher*
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AND THEIR COSMETIC NEEDS CHANGE, TOO

WHEN, following World War I, cosmetics grew into a billion dollar business, Nopco—through research and sound manufacturing methods—was in a strong position to help cosmetic manufacturers to improve and modernize their products.

Today, Nopco and the cosmetic industry are of course subject to wartime restrictions. Yet both have much to look forward to.

The coming *postwar era*, for example, will find Nopco ready to help you meet the peacetime demand for better beauty aids.

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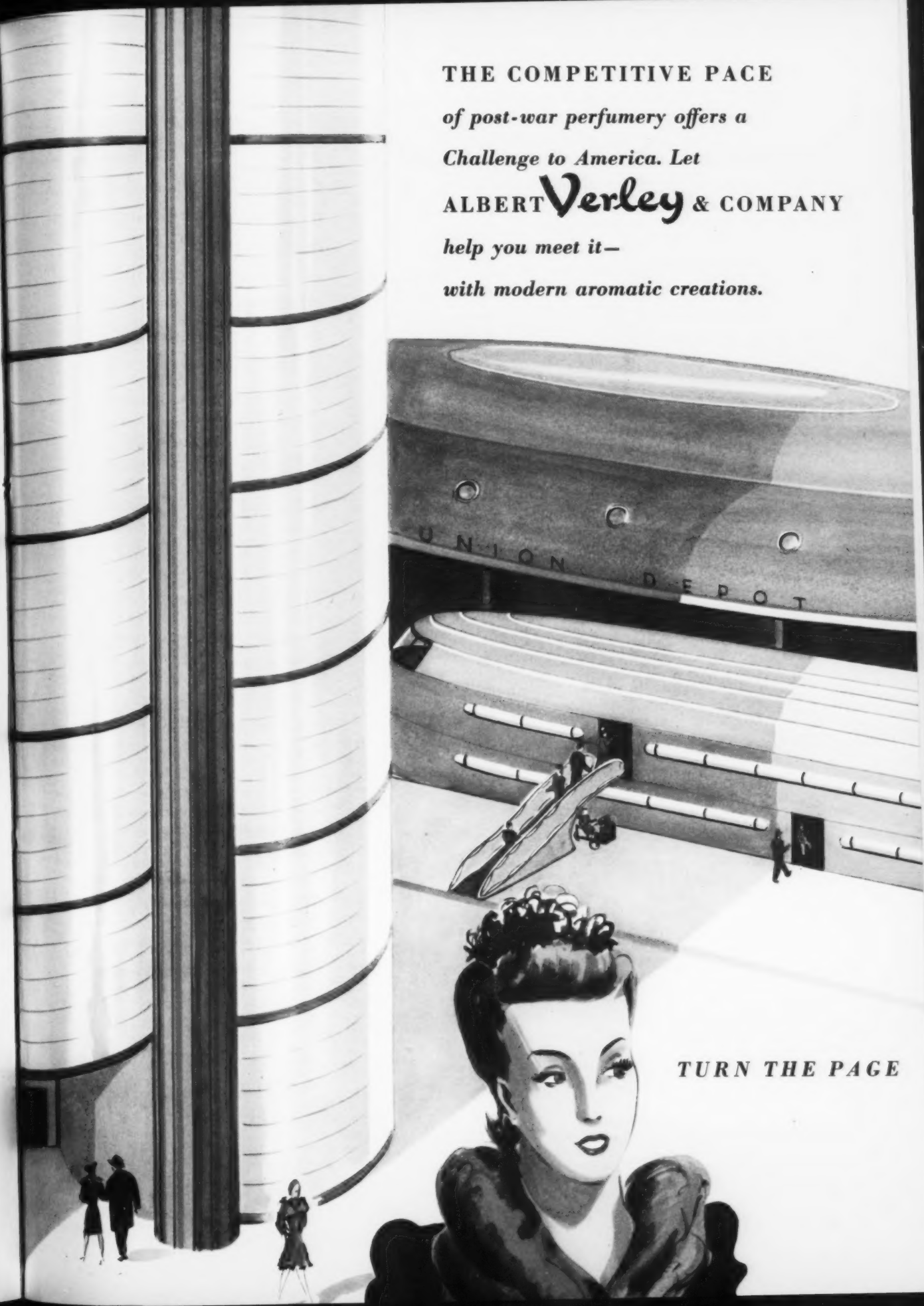

TURN THE PAGE

MODERN AROMATIC CREATIONS

by Albert Verley & Company help you prove*—to the world's most discriminating clientele—*that American perfumery has assumed creative leadership

At home and abroad, the greatest perfume and cosmetics market in history is preparing to pass judgment upon your post-war products. That market expects the contents of your packages to match your beautiful, alluring presentation.

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MEFFORD CHEMICAL CO., LOS ANGELES

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desiderata

Comment on interesting new chemical developments and their application to cosmetics and toiletries.

by MAISON G. DENAVARRE

LANOLIN SUBSTITUTES

Even though lanolin has *eased* a "tiny bit," the substitutes are going to get a big play, a mighty big play. For when you need five drums of lanolin and can get but one drum, four drums of something else must be used and that something must be pretty good or it will ruin the product.

Earlier, it was mentioned that several substitutes have come to this writer's attention that were worthy of mention. Since that time, one of these products has really performed. I've used it in a number of formulations and it is amazing in the faithfulness that it duplicates the feel of lanolin on the skin. Creams have the same feel as lanolin creams. The odor and color is also right on the barrel head. Several people who have tried it likewise find it swell. Quantity prices are lower than that of lanolin, a further inducement. Besides this, the product has excellent emulsifiability. It is an excellent absorption base because of its high emulsifiability. It is destined to be here as a permanent ingredient. It works well in lubricating, cleansing, shaving and absorption base creams. It undoubtedly has other uses too.

LEG MAKE-UP

A new material has just become available for the making of leg make-up that is a super duper product. It beats bentonite because it doesn't powder off. It doesn't gel like bentonite. Less methyl cellulose or other pigment adhesive has to be used. It can be worked into a formula with practically no glycerin or propylene glycol. It has very nice suspending power for pigments besides being low priced. It is just off-white in color and easy to handle. No grit. Streaking is overcome to a large extent. The leg make-up doesn't powder quite so much. It makes the product feel creamy on application.

M. G. DeNavarre at work in his laboratory

BATH OIL BASE

There has been a recent vogue for a highly perfumed bath oil that "smells up the whole house." The oil usually sells for a dollar or more for a one to two ounce bottle. It has a great power of diffusion and is sold on this basis. One company offers a base that makes such bath oils what they are. The resulting product made from the base spreads as a thin, practically continuous film over the bath, *keeping the perfumed oil on the surface* thus volatilizing more readily into the air, and the less so into the bath water. A bath oil formula would consist of varying quantities of this base up to 100%, not including the perfume bouquet. As little as 50% of the base can be used for good results. With less base the bath oil begins to lose the ability to volatilize so completely and to maintain a thin continuous surface film.

GLYCERIN vs. PROPYLENE GLYCOL

As long as propylene glycol can sell for less than glycerin, there is going to be less desire on the part of industry to return to its use in formulas that have been made with propylene glycol and found satisfactory. Yet, there are some formulas where propylene glycol cannot completely replace glycerin. The two can be used together with good advantage in these products. There are other products in which the results have been better when the glycerin has been cut and replaced by propylene glycol. In addition, sorbitol syrup is easing up to further give glycerin a run for its money. The glycerin producers better find new chemicals based on glycerin, because it is doubtful if it will ever come back to its former tonnage as a humectant, or plasticizer in cosmetics in particular.

COLD HAIR WAVING

Already the cold method of hair waving is manifesting signs of growing up. At the last trade show in Chicago, private showings of a new method, NOT using thioglycollates, were the talk of the show. Similar showings are taking place in New York and apparently other large cities. From the talk, it is some sort of *miracle* method. Personally, I'll believe it only when I see it. It must be a miracle if what is said about it is true.

In any event, the sole suppliers of thioglycollates who said they would make a killing, have something to worry about. They certainly have kept a lot of other people up in the air. Now the shoe seems to be on the other foot. Then too, several new sources of thioglycollates seem to be coming up. Even so, thioglycollates will undoubtedly not be the active materials in future cold waving methods—at least not the major active ingredients. There are too many headaches connected with

Sheffalloy TRADE MARK REGISTERED
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WHENEVER you wait for a shipment of tubes beyond the time you should have them, you're doing YOUR bit toward winning the war. For, many of the Sheffalloy Tubes that normally go into civilian use are now packed with vital medicinal and pharmaceutical ointments that are going on convoys to our boys on the battle fronts of the world. We're proud of our contribution to the war. IF, occasionally, you should have to wait for a tube shipment, remember we are eager to serve you just as quickly as we can!

NEW ENGLAND COLLAPSIBLE TUBE CO.

3132 S. CANAL STREET, CHICAGO 16 • NEW LONDON, CONN. • W. K. SHEFFIELD, 500 FIFTH AVENUE, NEW YORK 18
THE WILCO COMPANY, 6800 McKINLEY AVE., LOS ANGELES 1

them. There is also the apparent great tendency to sensitization of the operator. And who can kill something faster than the beauty operator? If she is against the thing, brother, it is as good as buried.

But the thioglycollates were an advance over ammonium hydrosulfide, and other things will be an advance over thioglycollates. Apparently, the large companies making waving supplies believe this too, for quite a number of the "big boys" do not supply cold waving solutions. They are not dopes. They too have technical skill in their employ. There must be another reason.

To complicate the whole thing, one large national supplier cut the price in half. That starts the ball rolling. When the operator can't make any money out of waving hair, she won't wave hair—at least not today. She doesn't have to. There is a lot to think about here; that is, the different aspects of cold waving.

HORMONE CREAMS

Still another estrogenic hormone cream has appeared on the market. It simply goes to prove that the trend is not a passing fancy. A proper vehicle, and 5000 International Units of estrogenic substance makes a very useful product. Women claim that one application makes their skin feel so much better the next morning. It should be preferably used by women past forty years of age.

FACE POWDER TREND

There used to be a strong sale for face powder with a light or low covering power. This character was found in French type powders. They became very popular. However, in the last ten years the tendency has been to powder with greater covering power, a lot greater than the French type powders. Some still don't believe it.

Note the heavy sale for make-up foundations that are pigmented. Why? With their aid a better illusion is obtained because the total covering power of make-up base and powder is greater than of powder alone. Now comes pancake! This is not a low covering power item by a long shot. Still people think in terms of 10 years ago and stick to from 10 to 15% zinc oxide as covering agent or its equivalent. Note the increase in popularity of certain powders. Analyze them! They are *not* low covering powders.

It takes an effort to run up the stairs of business success but you can fall down without any difficulty.

Money, like air, is beneficial only when it is in circulation.—*Howard S. Neiman.*

Questions and Answers

495 CREAM SHAMPOO, WAVE SOLUTION

Q.: *Please send us the following formulas: cream shampoo, cream permanent wave solution, dandruff removing hair tonic without alcohol.*

J. D.—Kansas.

A.: Cream shampoo can be made very nicely from ordinary shampoo by simply reducing the water. To make the product opaque, add one of the fol'owing ingredients: lanolin, spermaceti, higher alcohols, propylene glycol stearate, mineral oil or petrolatum. A cream permanent wave solution is simply made by adding self emulsifying permanent wave oil to the solution itself. We are sending you the name of a supplier of such material. The dandruff removing tonic without alcohol is sort of a phony. No tonic will remove dandruff except by mechanical means. It may relieve the itching associated with dandruff or may hold the dandruff scales down on the scalp, but that is all it can do. For this purpose a water soluble oil is used along with perfume and any other ingredients that you may like to add, such as pilocarpine hydrochloride, resorcinol or some antiseptic.

496 WETTING AGENTS

Q.: *We are making a powdered hand soap containing modified soda ash, soap, borax and wetting agent. On account of the scarcity of soap we use the wetting agent to replace part of the soap. The resulting product does not work out well, besides having a tendency to cake in the container. It does not suds up enough. Can you suggest anything to improve these conditions?*

S. C. C.—Ohio.

A.: Only a few of the wetting agents, so-called, will lather to any extent in the presence of modified soda ash and soap. The one you are now using is fair at best. We are suggesting one to you under separate cover which you might try. Of course you know that all the good wetting agents are practically unobtainable in dry form. The product we are suggesting to you does not seem to cake in the presence of soda and phosphate mixtures.

497 INSECT REPELLENTS

Q.: *In the Q and A Department of a recent issue of the* American Perfumer *(number 486) you mention an insect repellent which can be used in creams and lotions. We would be grateful if you would send us the name of the manufacturer too and give us any other advice. We are enclosing a self-addressed stamped envelope for your convenience.*

H. V.—Delaware.

A.: The insect repellent mentioned to enquirer No. 486 is now completely unavailable. Nevertheless, we will send you the suppliers name under separate cover. In due course the American Perfumer expects to run an article on this subject which will appear far enough in advance of the time when good insect repellents will be available so that its readers can carry on experimental work and be ready for the post-war market.

498 DEODORIZING CARBONS

Q.: *I am requesting the name of the carbon used and also the best brand of isopropyl alcohol mentioned in previous issues of the* American Perfumer.

E. D. S.—Pennsylvania.

A.: Under separate cover we are sending you the names of the two major suppliers of deodorizing carbon together with the name of the supplier of the deodorized isopropyl alcohol. The American Perfumer, starting with the October issue and several subsequent issues, has described the mode of using deodorized carbons with isopropyl alcohol, and we suggest that you read these over again. In any event, best results are obtained when the alcohol is diluted with water. Do not heat over an open flame, and filter immediately upon cooling.

499 FILTERING MEDIA

Q.: *I noticed in the December issue of the* American Perfumer *the remarks regarding filtering solutions that will react with the filter aid. I am making a lotion using resorcinol monoacetate, and I notice that when I filter through magnesia the filtrate turns dark red. What kind of filtering media do you suggest we use?*

S. K.—Alabama.

A.: You should use an inert material of which purified diatomaceous earth is one. There are several trade names for this material, and there are a number of varieties available. We are sending you the names of the suppliers under separate cover, and would suggest that you tell them what you want to achieve. In this way, they can suggest the best filter aid they make. At no time should magnesia be used with materials that might react with it, such as the ingredient you are using.

FORTY EIGHT YEARS *a Leader*

For more than forty-eight years the name of Chuit, Naef has been synonymous with the production of the highest quality group of synthetic and aromatic chemicals obtainable. Today, as then, this reputation continues unmatched. ✓ ✓ Throughout these years the Chuit, Naef organization has expanded its products to the point where they now rank as the most complete line of perfume raw materials available to the toilet goods, perfume extract and soap fields. ✓ ✓ As sole United States agents, let us convince you of the remarkable adaptability of our products to your line — *and our ability to deliver!*

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FIRMENICH

Beautiful Packages for Inexpensive Products

Women of today are learning to appreciate packages of distinction. Will post-war facilities enable us to give them a new style of cosmetics, beautiful, but at low cost?

by JOSEPHINE VON MIKLOS

IN THE DAYS when only those who could afford quality perfume possessed it. because scents were almost exclusively the results of a poetic longing in the soul of the alchemist, perfumes were luxury items only. Today synthetic odors are being used in much greater quantities in combination with the natural and doing an adequate job. This diminishing amount of the natural may continue after the war for the cheaper lines. And so, in these instances theoretically, there is no longer a definite limit to price based on origin of an odor. However, it is, of course, true that the customer who buys a $25 per ounce perfume may assume that she is getting something which is made of rare oils. The very rarity of the content then is supposed to express elegance, chic, chi-chi or whatever is supposed to mean sophistication. Perfume which sells for fifty cents an ounce will not be expected to travel along the same road. The women who formerly were reduced to buying that type of scent did not expect to vie for attention with the more sophisticated creatures on the Fifth Avenues of the world.

MISCONCEPTIONS OF THE MASSES

This distinct difference in contents and appeal used to decree automatically the type of package to be used for the various ranges of perfumes. For perhaps somewhat curious reasons we used to think of expensive packages in terms of simplicity of line and design, and an abundance of doo-dabs on the cheaper kind of merchandise. We were able to use the finest of handmade bottles, silk, velvet and other comparatively rare materials for the presentation of our expensive perfumes. For the inexpensive, we were reduced to the use of printed decoration and stock containers which were mass-produced and perhaps louder colors, because we thought they appealed to those who not always understood that discrimination is the better part of taste.

In other words, we used to think in the old days that people who could only afford inexpensive things had no, or bad, taste. We used to think that smart merchandising for the masses consisted of "putting it on thick." We used to think that tricks and bright brain storms had more appeal to the average middle and lower class consumer than dignity, style and discrimination.

IMPROVED TASTES

However, times have changed and we are headed toward a great deal of transformation. It has been said for come time now by a good number of people, but I believe it can not be said often enough: the millions of women who have been educated to better taste during this period of increased earning power will most likely not be willing to relinquish that taste when their pocketbooks are again reduced to normal size.

To put it in more definite terms; a woman who is now able to shop in places like Neiman - Marcus, Bonwit Teller, Magnin, etc., has learned to understand and appreciate the value and appeal of packages like those by Chanel, Guerlain, Milkmaid, Mary Chess, or any of the other high priced toiletries which, through their very simplicity, have always been considered the utmost in sophistication. She has become so used to incorporating this type of luxury into her daily scheme of living that she will automatically demand similar things even if she can no longer afford the prices she now pays. She may well reject the appearance of a dollar perfume package if it has no way of reminding her of a world to which she too would like to belong.

DEMAND FOR QUALITY

She will demand good things at whatever price, and in the opinion of many merchandising people, who are thinking in terms of the future, and most certainly in the opinion of this writer, she has every right to do so.

Beauty was surely not created as the privilege of a few and we all must realize now that the future of merchandising lies in an understanding of taste and style, and a willingness to present them to a much wider range of people than were ever catered to before in this particular respect.

UP-GRADING MERCHANDISE

This, of course, does not mean that exclusive and high priced merchandise will be non-existing after the war. It does not mean we should forget that there will always be people whose taste runs automatically to style and who will be willing to pay the price for exclusiveness. What it does mean is that there is a definite trend toward upgrading of all kinds of merchandise. It would probably be fair to say of all kind of merchandise in whatever field women are concerned.

Will this then mean that houses that deal with mass production and, therefore, less expensive merchandise, will continue to copy the style of specialty items? Or will it perhaps means that there might be a new type or style which has no direct relationship to the fine science of dollars and cents, but

which will depend on ingenuity and a belief that there is great sense in trying to make the best good enough for everybody. This may, at this moment, still be no more than wishful thinking; on the other hand, the way in which many of the great American cosmetic houses are directing their thoughts toward post-war designing seems to bear out this theory to the full.

STYLE AT LOW PRICE

To dwell for a moment on the thought that dollars and cents have really nothing to do with taste, I should like to think a little further along these lines. It is quite obvious that if a package sells for one dollar it cannot be dressed the way a twenty-five dollar package may be presented. But rather than trying to make a dollar package look like a twenty-five dollar one, there is no reason on earth why a shape or a line or a color that is in essence good, can not be executed in any material.

The advent of new materials in the post-war packages will contribute much to good design. These new materials will be available in quantities undreamed of before. Although we do not for instance, yet know whether the promises made for miraculous new plastics will in fact be borne out, all of the old and known materials have also made great advances through the years of war production. New mechanical methods have been devised, new twists of engineering, new combinations and application of various materials.

UNLIMITED POSSIBILITIES

We have at our disposal a tremendous range of new possibilities in the use of which we will be limited only by our own understanding of the possibilities and their development. The designer of toiletries will become more than a wielder of brush and pencil or a fancier of pretty dreams. He will have to understand research, mechanical production and the ramifications of many materials. The merchandiser and production man will work hand in hand with the designer to a much larger degree than ever before because he, too, will have to study new markets and new materials much more thoroughly than he ever was called upon to do before. When it comes right down to it, beauty and taste are not the things that cost money. They are perhaps less intangible than a name or a tradition.

THE NEW ERA

What all this comes down to is the fact that we may be able to disregard price of packaging as the primary consideration when it somes to the presentation of a perfume in whatever range. We will have to appeal to a wider range of people with better taste and better design; we will perhaps be able to reserve no longer simplicity and elegance for the chosen few; we will be able to submit for acceptance by all consumers, the very best ideas which we can develop. And so perhaps the time may come when we hear less and less often this old remark: "This looks too elegant—our customers do not have that kind of good taste."

Containerboard, Folding and Setup Boxboard

Fibreboard containers have been produced in greater quantity during this war than ever before in the history of container production. Wartime developments have expanded the uses of these containers and have opened new fields to paperboard manufacturers. Put to test under the exacting conditions of overseas shipment, the solid fibre and corrugated containers have proven their ability to withstand rough handling and extreme temperatures. These characteristics will undoubtedly prove equally valuable in increasing the importance of paperboard containers for both foreign and domestic use in the post war period.

CONTAINERBOARD

Intensive research since the outbreak of the war has produced solid fibre and corrugated containers which are weatherproof and which can withstand the most adverse shipping and storing conditions. Waterproof tape, which does not lose its adhesive qualities by prolonged immersion or subjection to extremes in temperature, has been perfected for sealing the containers. A laminated fibre substitute for steel or wire strapping, which can be used for strapping all types of packages weighing 90 lbs. or less, has recently been developed.

Present demand for fibre shipping containers to transport goods formerly packed in wooden boxes runs into millions. The food products industry alone will require yearly 100 million or more fibre boxes to replace those made of wood. It is evident that peacetime requirements will more than balance the number of containers required for war purposes.

Airborne freight is no longer an idle dream. We can look forward to the permanent use of aircraft for the shipment of cargo freight when peace returns. Outstanding packaging engineering will be needed to develop containers which combine the greatest possible protection with the smallest possible tare weight. Corrugated fibreboard will provide one of the most successful answers to this prob'em. It is not surprising, therefore, to find several air transport companies creating packaging departments to study this new shipping problem.

FOLDING BOXBOARD

Folding boxboard and boxes were in general use for many years, but scarcity of such essential materials as tin and rubber brought about increased use of cartons and boxes as replacements. Collectively, the folding box industry, as a result of substitute container development saved the following war materials during 1942: 215,000,000 lbs. of metal; 750,000 lbs. of glass; 256,000 lbs. of cellophane and pliofilm; 12,000 lbs. of rubber; and 8,000,000 board feet of lumber.

The new developments in the folding box field are too numerous to mention. Liquid-tight folding boxes, originally developed to hold liquid and semi-liquid substances, have been adapted to many other kinds of products, including milk and shortening.

Many of the conversions to folding boxes will doubtless be permanent in the postwar economy. Low production cost will be an important factor in enabling this type of container to keep the foothold it has gained, even though metal may become more abundant after the war. It is also possible that the folding box will enter the foreign market as an export article. The folding box in its knockdown state is ideally suited for shipment at low freight cost.

SETUP BOXES

In the past considerable quantities of setup boxes have been used by the drug trade, but WPB Conservation Orders gave the setup box industry its opportunity to demonstrate how extensively its products could replace metal and other containers constructed of critical materials.

Given sufficient time to perfect the new packages before peace returns, the practical conversion from metal and plastics to the new use of paperboard containers should be permanent in many instances. From the standpoint of sales appeal many of the new packages are considered even superior to the containers they have replaced. Therefore, if the cost of production can be brought within certain limits, there appears to be no reason why setup boxes should not retain many of the new fields they have entered during the war.—*Facts and Features.*

Courtesy of The Pennsylvania Railroad System

Roller bearings, automatic grease reservoirs and self-oiling attachments keep modern railway equipment flowing on rivers of oil, without accidents.

Lubricated Clothing! Restore Fibres with Vitalizers

Clothes like practically all things need to be lubricated to keep them in good condition . . . The natural oil in them dries out with wear and tear and must be replaced regularly

by CHARLES V. SPARHAWK
The Sparhawk Company Sparkill, N. Y.

HAVE YOU LUBRICATED your clothing recently? It sounds incredible, unbelievable — *lubricated clothing!* Yes—the writer means it. It may be a startling question to many. But if you think about it, is it so surprising? Have your clothes received the required plasticizer to keep them soft, pliable and resistent to wear?

Just as machinery wears out, like metal loses its resiliency unless kept oiled, fabrics deteriorate when their natural oils lose their vitality from repeated washings or too frequent dry cleaning. Clothing also rots and decays just as metals wear and break when the proper lubricant is not properly incorporated. Who has not opened a closet or clothes chest that has been closed for a long period, only to find the woolens decaying from dry-rot; the strands brittle and breaking under the pressure of a finger? They have become dehydrated. Often bed sheets and dresses become useless through dry-rot. Items of clothing left for years in closets and other confined places practically fall apart, if subjected to any wear or tension. In other words, their tensile strength has been destroyed.

ORIGINAL NATURAL OILS

The explanation is simple. Furs, woolens, feathers are all obtained from animal sources. They contain in their natural wild state oils of their original owners. They are animal products that hold in them the basic greases to preserve and keep them soft. Wool for instance has pounds of lanolin, a wool grease that is often extracted and employed in salves for its medicinal virtues. And when furs lose this normal content of oil, it is necessary to have them glazed by professional furriers to restore their smooth and lustrous sheen.

We can even refer closer, to our own person. Every woman knows that too frequent washing of the hair makes it dry. It becomes unmanageable. Vaseline or some other good lubricant is needed to produce the gloss and restore its natural beauty. All hair tonics contain a high percentage of oils, glycerin or other lubricants. Professional hairdressers know a beautiful coiffeur is impossible if the hair lacks vitality and is of coarse texture. And if at times the follicles can not lubricate themselves, the hair falls out. Many cases of baldness and scalp irritation are the result of this condition. Here again artificial lubricants are valuable.

Thus oils are our constant companions since birth. Doctors recommend olive oil to lubricate tiny babies, whose skin is inclined to chaff and become irritated. Grown-ups lubricate their bodies with bath oils, use cold creams on their faces, rub hand lotions on their hands. We therefore apply lubricants to our physical person, so why neglect our clothing that needs similar care? Watchfulness in keeping these articles supplied with the proper plastic mediums results in sturdier cloth, longer wear and more attractive appearance.

Perpetual motion that requires constant lubrication to reduce friction and chaffing.

Handlers of metals appreciate the saying: It's better to wear out, than rust out. Even metals respond to corrosion, and for that reason steel is lubricated with alloys to make it resistent to strains and able to stand the heavy pounding of cannon shells, mighty waves of the sea and the dead weight of massive buildings. That is why modern engineering for railroads substituted steel rails for iron, so the locomotives and heavy trains could travel safely without reducing speed and sacrificing freights of thousands of tons. Split rails cause wrecks that are costly and mean loss of life.

All automobile owners understand the importance of oil and grease for oiling. If the car is not kept lubricated and properly greased, axles, bearings, pistons become worn and very quickly the whole mechanism breaks down. It is the friction and wear of surface rubbing that destroys the ability of even an engine to function. The contact points heat up, valves stick; if not attended to properly, the whole car soon becomes useless. Every car owner realizes the truth of the statement: It is cheaper to buy oil than purchase new parts.

FRICTION IN CLOTH

In a similar manner woolen, cloth and other fibres of clothing are in continuous motion. There is constant friction of the tiny threads that make up the fabric. Their threads are woven in such form they stretch, bend and twist with each movement of the wearer. Their whole tight formation is subjected to a terrific strain. Only the oils and the greases placed there by nature keep them from snapping and ripping. The lady with a run in her stocking realizes that only one thread has been unable to withstand the pressure put upon it, with the result it has broken. The whole weave is pulled out of line. The rip extends and the entire stocking is shapeless.

Why do you suppose silk is used for parachutes in preference to cotton? Each cord that is connected to the chute is tested to stand a dead weight of two hundred pounds and there are many of these to share the heavy shock and jolt when the aviator jumps and then rips open the silken covering.

STRENGTHENING SILK

Silk in its raw state can not be woven on a loom. It is brittle and can be easily broken. As the tiny strands of silk are drawn from the individual cocoon, they are twisted and turned till they form a strand. Then the strand goes through a process known as *throwing*, where it is soaked in olive oil or some textile lubricant that supplies the same result, to give it softness and keep it flexible and impart tensile strength. It thus becomes a workable thread that can be stretched and pulled, giving a rubber character, so when extended, it will return to its original form. On fast modern looms, silk threads fly back and forth with the speed and precision of a rapid fire gun. With each stroke of the shuttle it forms cloth, ribbons and other articles. It is the grease and oil in the threads that produces this change from a delicate, fragile thread.

For the same reason, when the paratrooper falls with the weight of his own body drawn by gravity, as the folds bellow out and his fall is broken by a sudden jerk, the silk weave gives and bends under the strain, but does not rip or tear. It is the lubrication the silk receives beforehand that gives it this quality to hold together. It is like a piece of oiled paper in comparison with a dry, dehydrated sheet that is so easy to tear into pieces. Here we have lubrication at its highest efficiency.

PROBLEMS OF PRESERVATION

One answer to the problem of keeping clothing properly conditioned might be humidifiers placed in closets and wet sponges and damp cloths in drawers and chests. But there one has the danger of mold, decay and rot from an excess. With changeable climate and steam-heated homes, continuous evaporation would call for constant replacement of these conditioners. Dampness destroys more materials than it preserves, as is illustrated by shoes that have to be kept oiled and greased to keep them water-proof.

The question is plain. Granting oils are needed, how can these widely different types of wearing apparel be lubricated. Many would say it is impossible. It would be like unscrambling eggs after the original ingredients had been mixed. The writer's answer to the problem is simple and to the point.

CED-R-WOOD SPRAY

The solution is Ced-R-Wood. An oleoresin of cedar that precipitates a film of true cedar after the volatile solvent disappears. The active principle then becomes non-volatile, although clothing will absorb these oils and greases as they volatilize, leaving them impregnated with its fragrant aroma. The Ced-R-Wood is sprayed on the walls and back of the door of closets, or placed on the wood of chests and bureau drawers. The soft liquid creeps and crawls, entering the cracks and crevices where insect pests lurk. It envelops the eggs and larvae of moths. Its odor permeates the air; it enters the folds of clothing like a mist of active, saturated moisture. All cloth and furs acquire this sweet fragrance that is so closely allied to sandalwood. The East Indians have a quaint expression in regard to that sweet wood. They say: "The sandalwood tree *kisses* the axe that smites it."

POWER OF RECOVERY

The power of recovery is recognized in all nature's products. Dehydrate an article, and it recovers its moisture if exposed to a liquid. Press the oil from any solid material and it retakes the

oil quickly if again immersed. The secret of water-proofing and oil-proofing relies on this principle. The protective ingredient is not soluble in the particular liquid it is designed to keep out. But natural greases will return to their original product, as a sponge sucks up water if given the opportunity.

RESTORING OIL TO CLOTH

When man moved out of the forest and fields into congested cities, he left behind the oils, waxes, greases, fats, gums and other articles that lubricated his living on the farms. Home-spun cloth and hand-tanned leathers did not need further conditioning. They retained their greases. But man found homes dry, uncomfortable for his pleasure, so he brought in paints for the walls, oils for the floor. His wife carried lard and tallow for her use. They even burned oil to keep warm. Some one has said. "The man who first invented shoes, carpeted the earth with shoe leather." So has man enveloped himself in oils.

But modern laundry methods, dry cleaning establishments, overheated rooms, dry hot city streets all have taken their toll in dehydrated cloth. When man observed his body covering and the materials to keep him warm, he overlooked the oils that nature supplies so abundantly. While every living thing had its quota of vital oils; he failed to observe this need to preserve wearing apparel.

So we're not joking when we ask, have you lubricated your clothing recently? Have you revitalized their fibres with a good vitalizer—like Ced-R-Wood — for this is the *grease monkey* that keeps your cloth rolling.

Courtesy of the Bureau of Information, U. S. War Dept.
Its lightness, flexibility and ability to spill air make it strong.

Little Things That Help

Much has been written of the colossal problems of supplying a 7-million-man army on a world-wide battlefront. Yet there are also many little things, which, like the nail that lost a kingdom, are vital to military success. Others play a big role in keeping up the soldier's morale, saving money, or in just being plain helpful.

SOAP

Soap, for instance, is hardly considered a luxury; yet in some remote areas it is virtually priceless. It is issued when soldiers are out of reach of stores or post exchanges where it can be bought. Two bars of soap, for example, go in every 10-in-1 ration, and to avoid possible disappointments, the Quartermaster Corps has developed an all-purpose bar that lathers in any kind of water under any conditions. What it does for soldier morale is probably beyond comprehension.

CHAPSTICK

It is hard to conceive of America's fighting Army having any use for lipsticks other than those used by the girl friend, but the chapstick serves many a blistered face and cracked lip from the torrid desert to the frigid Arctic. Swabbing it over a soldier's face means the difference between pain and comfort, and no soldier in pain is at the peak of fighting efficiency. Hence the chapstick is another of the little items that, in a humble way, contributes to military success.

INSECT PROTECTORS

The matter of insect control is a potent one, insofar as the Quartermaster Corps is concerned. In most armies, the disease-bearing insects are combatted to at least some extent, but little effort is made beyond that stage. In our Army the battle is carried on just as relentlessly against the insects that are just plain irritating.

The great insect protector, aside from the familiar mosquito bar (now the sandfly bar with a much finer mesh), is the insect repellent. This item does not kill the insects; instead it scarces them away. It is hard to imagine a grim-faced Nazi worrying about scaring flies away from his men, but the American way is to provide comfort whenever possible, so insect repellents are part and parcel of every task force in insect-infested areas. A soldier who can smear something on his hands and face and then relax, knowing that it is obnoxious to insect pests, has at least one worry taken off his mind.

CANDLE FOR HEATING

To provide a means of heating the meat components of combat and emergency rations in the field, the Quartermaster Corps has developed a new type of non-toxic square candle. It burns with a hot flame and is designed for use with the "C" and "K" rations as well as the recently developed 10-to-1 ration.

Because of the necessity for traveling light, it is not practicable to carry one of the small gasoline stoves to heat his rations or boil water.

The candle is composed of refined paraffin wax with a high melting point and wood flour, and it is packaged in a waxed paperboard carton. The carton serves as a fuse to light the candle and also as a shell to prevent the wax from running at high temperatures.

The wood flour in the composition retards melting of the whole candle and also acts as numerous small wicks so that the candle burns on five sides at one time instead of only on top, as does the ordinary candle. Even after being submerged in water for several hours it will ignite readily.

The candle is being furnished in two sizes. One is a bar which may be broken into three smaller blocks, each of which is sufficient to heat the can containing the meat component of the "C" or "K" ration, or to boil a little water in a canteen cup for hot coffee or cocoa. The other is a block containing sufficient fuel to heat one meal from the 10-to-1 ration for five men.

A small aspirin-sized halazone tablet makes river water safe to drink; a thumb-size ampule of methyl bromide will completely sterilize a soldier's clothing in half an hour. These and countless other little things are helping the Quartermaster Corps supply fighting men who are winning a big war.

Short Adages

by R. O'MATTICK

WE HAVE JUST received a letter from Pat Chouli, who is spending these Spring days in Puerto Rico! Unless we are wrong, his communication is so replete with interest to our readers (long may they live) that we print it in full:

San Juan, P. R., W.I.
April 1, 1944

Dear R. O'Mattick:

Attach no significance that I am writing to you on what the English call "All Fools Day." I don't know how to say it in Spanish, as I am here only two days and haven't had time to learn Spanish as yet. Then again, I may not bother, as most of the senoritas here speak English. You will not be surprised to know that I am here, for practically everyone in the perfume business is. The population of the island, according to the latest census is about 1½ million, but they took the census before Uncle Sam took our alcohol. There must be an extra million who came here since January, each carrying a copy of THE AMERICAN PERFUMER *under his arm. You can readily guess from this what business they are in and what their business here is.*

This island (I believe everything I read in the Guide Books), is the smallest of the Greater Antilles, but it is doing its share with regard to getting perfume oils into solution the only proper way. Chris Columbus landed here in 1493 *and called the place San Juan Bautista. Ponce de Leon (the same fellow who was always looking for the Fountain of Youth) came over in* 1508 *and named the bay Puerto Rico. But nothing much really happened here, with all due respect to Teddy Roosevelt, until recently. There is no bay rum in the bay. Things got mixed up somehow. Now the bay is called San Juan and the island Puerto Rico instead of the other way round. But the bay is full of boats and the boats are full of cans and the cans are full of perfume oil compounds.*

You can get a whiff of the aldehydic gardenias and the clovy carnations and the lilacky lilacs miles before the plane sights land-ho. Yes sir! There must be more perfume oils here than in all the 893 *warehouses of the Essential oil houses in New York. They simply moved their inventories across the sea. And the alcohol isn't really so bad, external and internal—once you get used to it. Anyway it's better than the native music which was probably cooked up in Hollywood.*

I must run along now as I am meeting A. Goodbuy, Otto Stock and June Ippère at the hotel for a fiesta and a siesta so will say adios until mannyana and will write again before the alcohol evaporates.

Yours for full proof,
Pat

* * *

Well, the annual Drug Trade Dinner is over until next year. All-in-all it was a good affair, but there ought to be a little variation. Dr. Rowmateral, who has attended every one of the Dinners for the past two dozen years, says that each year he expects not to show up, but doesn't know what makes him get there just the same. According to him, he knows exactly what drink Sand L. Wood will be having and in whose room at 12:43 A.M., year after year. Yes—there ought to be some variation. And at 1.57 A.M., at 2:14 A.M., etc.

* * *

Dr. Rowmateral had quite an experience a few weeks ago. He was working with a very pleasant and tenacious aromatic, one of those new monomethyl-diethyl-tri-everything derivatives and he was happy to discover that its odor was remarkably lasting. In fact, for days after, even after taking hot showers, his hands still had traces of the characteristic odor. Then he realized it was too good to be true! He got hold of the bath-room soap and sure enough—it had the same odor that he had been working on for ten days.

* * *

There ought to be an absolutely scentless soap on the market, said the Doctor, so that we perfume chemists, compounders, essential oil salesmen and buyers and all and sundry who handle odoriferous materials to pay our income taxes, can clean up after a day's work. What is the good, sir, of working all day with a violent violet and then go home and wash with a lavender lather?

* * *

Good idea, Doc, but scentless soaps won't do our business any good. In that not-too-far-off—we hope—post-war-era, we look for a lot of perfume oil with a little soap in it—more business and less taxes.

* * *

Do your remember the good old pre-war days when the T.G.A. Convention was a three-day and a four-night affair, with a theatre party and golf on the green and a banquet night and what not? And on one of the very quiet afternoon sessions when hardly anyone was around to listen—someone would speak for five minutes on emulsions or pH or some other highly *scientifik* subject; this was to give the chemists a lift.

But now a whole evening session will be devoted to scientific papers at the next T.G.A. Convention. Which all goes to show that times change.

"My beautiful copy was turned down flat; all the client wanted was a picture of his perfume and 'It smells okay' in 18 point extra bold!"

Leg Make-Up—Is It Here to Stay?

Complaints in leg make-up were so numerous when it first appeared on the market that it seemed doomed to an early death, but improvements of last year brought it back to life

by M. G. de NAVARRE

THE VOLUME of business in leg make-up during 1943 was considerably greater than in 1942. The consensus of department store opinion seems to be that the 1944 market will be approximately as good as it was last year.

Liquids far outsold creams with a substantial portion of business being done by one brand in large department stores. Sticks and creams seem to be more difficult to use.

A good many toilet goods buyers in department stores seem to feel that once good stockings come back, leg make-up will practically be forgotten, except for a modest summertime sale among the younger girls. There is no question but that leg make-up is cooler for summer use than stockings. It is believed possible that summer sale during normal times may be greater if the products are perfected to the point where they do not streak, rub off or smudge when wet, as by rain.

Some of the complaints noted were that the make-up was best applied with the bare hands which in turn made it a messy job. It has to be applied before dressing, and if the preparation is a good one, it washes off the hands and out of the nails with considerable difficulty.

Many women feel that leg make-up rubs off too much and as a result it tends to damage their clothing. Of course this is somewhat far fetched as regards damage because all of the materials are inert, but there is not question about the staining of clothes, whether they be light or dark colored. Some products rub off more than others and for this reason one brand was extremely popular last year—it seemed to have better wearing properties without rubbing off.

Courtesy Frances Denney

Her liquid stockings should not rub off, streak, or run when wet.

Coming off in the rain or when wetting otherwise seems to be a major complaint. If this fault can be overcome, it will help to make the products more acceptable.

Most of the buyers feel that there is going to be difficulty in getting any good stockings this summer, and thus that leg make-up may get a larger play than it would have otherwise. As a result, it would pay manufacturers to perfect their product to the highest degree at this time so that they can become more firmly entrenched on the market and thus able to compete with good stockings when they do come back.

THE WHY OF RUBBING OFF

Because the leg make-up is really a suspension of pigments in water, the powders tend to rub off on drying. Various ways have been used to overcome this. Some companies use a water-soluble resin to make the pigments stick when dry. Other companies have used dissolved gums. The most successful of these is methyl cellulose. Low viscosity material is preferred to the very high viscosity material. If too much gum is used the leg gets a tight feeling. To overcome this undesirable feeling, some companies have added a plasticizer such as glycerine, propylene glycol or commercial sorbitol syrup. They have also used some of the numerous glycerine substitutes. When one of these plasticizers is used, the resulting color of the film left on the leg is considerably deeper in shade.

WATER PROOFING

In the conventional formula consisting of pigments, water-soluble resin, all suspended in methyl cellulose containing one or two per cent of bentonite to further enhance suspending power, it is rather difficult to obtain water-proofing properties. The bentonite, in particular, together with the methyl cellulose causes the firm to wet quickly and dry to a spotted or mottled appearance.

An insoluble metallic soap such as zinc or calcium stearate must then be worked into the product in sufficient quantity to manifest water repellency. A water-proofing emulsion such as is

used in textile work, can also be used with good results. However, the continuous use of an aluminum salt on the leg may present a problem, but if aluminum subacetate is the salt used it is doubtful if any untoward reactions would result.

Working in an insoluble metal soap into an aqueous suspension is no easy task. Mixing it with the plasticizer or grinding it in with water and the other pigments will accomplish suspension. Undoubtedly, there are other trick ways of getting it too.

It is also entirely possible to use a wax-coated chalk that has been developed for rubber compounding, which will endow the product with waterpoofing properties. Of course, emulsified oils or other fats and waxes can be added, but these tend to come out of emulsion by adsorption onto the pigment particles. The resulting product is oftentimes very unsightly. Nevertheless, it is possible to get good emulsions this way.

STREAKING

It is practically impossible to compound a formula from bentonite, colors and pigments and methyl cellulose that does not streak. It makes no difference how much plasticizer is used, the formula still streaks. Streaking, however, can be made less apparent by rubbing down the dried film with a piece of cleansing tissue or a dry cloth. This rubbing down also gives the leg the desired sheen and removes the excess pigments which would tend to come off on the clothes anyway.

Streaking seems to be less apparent when bentonite and methyl cellulose are left out. A commercial colloidal gel of aluminum and magnesium silicates has recently become available. It is an excellent suspending agent for leg make-up, also acting to make the pigments stick better than they do in the case of bentonite. This gel is of a light cream color instead of the greenish-gray color found in bentonite. It seems to act as a better suspending agent too.

INGREDIENTS OF CHOICE

From the following group of materials, it is possible to select a number that will give a satisfactory product. The coloring agent is one or more of the numerous iron oxides available from a number of supply houses. The covering agent of choice is titanium dioxide, although zinc oxide may be used if titanium dioxide is unavailable. The plasticizer preferred is propylene glycol, although glycerine may be used alone or together with it. The filler may consist of regular precipitated chalk, wax-coated chalk, refined kaolin, bentonite or colloidal aluminum magnesium silicate gel. The adhesive of choice is medium to low viscosity methyl cellulose. Water-soluble resin may be any one of the polyalcohol borates. Alcohol may or may not be added, as is desired. The following formula gives the general limits:

	PER CENT
Bentonite	½ to 2
Plasticizer	up to 2
Iron Oxides	up to 4
Titanium Dioxide*	up to 3
Methyl Cellulose	up to 1
Aluminum Magnesium Silicate Gel	up to 30
Perfume & Alcohol	q.s.
Preservative	q.s.
Zinc stearate	q.s.

CONCLUSIONS

It is expected that a good sale for leg make-up will exist this summer, but that leg make-up will not be as popular once stockings come back. Liquid products have much greater preference on the market. As bottles, caps and cartons become unavailable, many brands will disappear from the trade. The product must not rub off. It should be water repellent and it must not streak. Stick, cream and stain-type products constitute only a small portion of the sales in this field. There were very few complaints on leg make-up last year.

* Or from 3 to 5 times as much zinc oxide.

Dermatitis Venenata Due to Nail Lacquer. E. D. Osborne, J. W. Jordon and P. C. Campbell. Arch. Dermatol. Syphilol., **44,** 604 (1941).—Nail lacquers are highly complex mixtures containing many ingredients which are potentially eczematizing. Similar lacquers are widely used in industry and are applied to the surface of many objects in common usage. Their importance as eczematizing agents should not be overlooked. Dermatitis due to nail lacquer is common and will probably become more so, especially in men. Nail lacquers are the most frequent cause of dermatitis about the eyelids in women and should be considered as possible causes of dermatitis of the face, neck, cheeks, ears, ear canals, shoulders, chest and lips. In all cases of dermatitis of obscure causation nail lacquer should be suspected and eliminated. This form of dermatitis is usually of a patchy erythematosquamous (red and scaly) variety. Macroscopic vesiculation (visible pimples) is the exception rather than the rule. Patch tests in cases of dermatitis due to nail lacquer are of doubtful value. They should not supplant careful clinical observation. *(Thru J. A. Ph. A.* **32,** *244, 1943.)*

Phenyl Mercuric Oleate - Skin - Irritant Properties of. C. P. McCord, S. F. Meek and T. A. Neal. J. Ind. Hyg. Toxicol., **23,** 466 (1941).—A laboratory investigation of the skin-irritating properties of phenyl mercuric oleate, an industrially used wood preserving agent, indicated its capacity to produce skin irritation in both human beings and animals, below, at and above the industrially used level of 0.2 per cent. *(Thru J. A. Ph. A.* **32,** *247, 1943.)*

Action of Disinfectants—*Chem. Age* **49,** *293, 1943.* It has been suggested by D. P. Evans and A. G. Fishburn of Cardiff Technical College that the mechanism of the action of disinfectants such as phenol on a bacterium takes place in two stages, a simple solution of the bactericide in the outer layer of the micro-organism, followed by coagulation of the protein in this region. Suspension of bacteria in liquids may be regarded as colloidal systems and sorption would be expected to occur at the bacterium-liquid interface.

These investigators tentatively suggest that the mechanism of disinfection by water-soluble bactericides consists of two stages, sorption on the surface of the organism, followed by chemical reaction between sorbed disinfectant and the protein in the surface layer of the bacterium. When sufficient of this protein has been precipitated, the organism is unable to carry out the process of reproduction and is considered dead.

To study this theory, the investigators used charcoal to represent bacteria, and various phenolic disinfectants. They found that for any given concentration of disinfectant below 1 per cent, the order of the weights of bactericide sorbed per gram of charcoal, was roughly directly proportional to increase in bactericidal power as measured by the Rideal-Walker test. This increasing order of activity was as follows: Phenol, ortho-cresol, meta-cresol, 3,5-xylenol, 2,6-xylenol, para-cresol, 3,4-xylenol, 2,4-xylenol, chloro-cresol.

Para-Cresol was sorbed to a lesser extent than phenol but the rate of kill is the same for 1 per cent of phenol as for 0.4 per cent of para-cresol. This indicates that in the chemical reaction between para-cresol and the micro-organism, para-cresol is more reactive than phenol. The influence of para-substituted chlorine is much greater than that of the para-substituted methyl radical. The work is being extended. *(Thru Soap and Sanitary Chemicals* **20,** *111, 1944.)*

Protecting the Factory Worker Against Skin Infection

Comfort and safety depend on the worker's skin cream . . . This should afford lasting protection against infection from dirt, oil or chemicals

by CLAUDIUS NIELSEN

Research & Consulting Chemist, Nielco Laboratories, Detroit, Mich.

If her cream leaves a greasy film, her hand may slip.

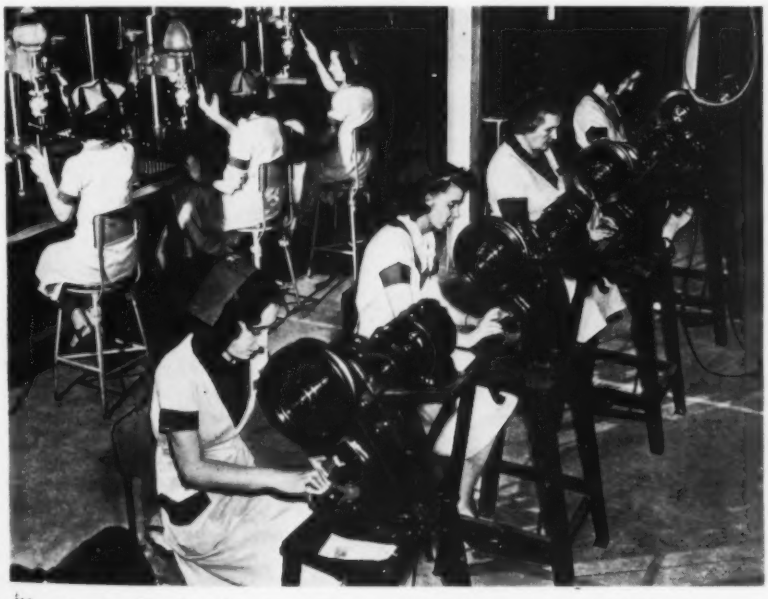
PROPER PROTECTION against skin infection and irritation is just as important to the workers as good protection against accidents. Yet few industrial plants have realized this. Although some have been supplying their employees with skin protective creams, how much actual protection was afforded they have never really known.

Eminent doctors have long considered industrial dermatitis from many angles, have studied and segregated the different types of fungus and have made excellent recommendations as to formulation of different types of salves or creams for treating of dermatitis. These recommendations have frequently been made from a strictly medicinal viewpoint without too much regard for their durability as to protective coating under industrial usage. There is no doubt that the formulas so recommended will provide some form of protection, and that the components incorporated in them are beneficial to the skin. On the other hand, some products sold on the market as skin protective creams actually are the cause of irritation due to the high free alkali content and as such are only a protection against dirt and oil sticking to the skin.

A doctor collaborating with a chemist experienced in formulating protective coatings and processing the oils for use therein could produce the best product.

TESTS IN THE FACTORY

However, neither could turn out the right kind of product by attempting to simulate the factory conditions in a laboratory. The only way to turn out the type of product required to meet working conditions is go into the industrial plant and work with the employees under actual operating conditions, learn their habits, and then have them try the different coatings formulated until the correct product has been produced.



Women workers like these deserve a hand cream that has been proven to be the best protection.

PROTECTION AGAINST IRRITANTS

Let us here consider the requirements of a protective film as it applies to protecting the skin against irritants of all the various types with which workers come in contact.

In most of the formulas recommended, we find castor oil and lanolin. Both are excellent oils for the skin; but as these oils are purchased on the open market, they afford little actual protection when used in such small proportions as recommended.

MOISTURE-PROOFING

No coating that is not even able to withstand moisture has much chance as a protective coating. Supply such a coating to the workers and then watch them go to the fountain for a drink, and unconsciously wipe the mouth with the back of their hands — in one plant nine out of ten went through this motion. In order to have continued protection for the balance of their shift, they should proceed to the washroom, wash their hands and apply a new coating of the skin protective cream used. It is not only a question of how many people would be bothered in this way, but also of the time lost.

Naturally, such protective coating will be somewhat harder to remove from the skin, but that is one point on which the employer must educate his workers if they are to have the utmost protection. In contrast to the water-soluble coating that comes off readily with cold water, this type will have to be removed by soap and warm water.

LEAVING A DRY FILM

Another important factor in the making of skin protective coatings that must be remembered is that no product of this type is of any value unless it leaves a dry film. In one of the plants which cooperated with the testing, the doctor had a salve made up of castor oil and lanolin, both ideal materials for work in such products. But they left a greasy film, with the result that accidents were frequent because heavy metal parts the workers were carrying slipped out of their hands.

OTHER INDUSTRIAL PROBLEMS

The men and women that were operating the thread-cutting machines, drill and punch presses, as well as those that were cleaning metal parts in kerosene and other solvents did not have the arms and hands constantly immersed in the chemicals; but stopped at times and wiped the oils off, usually with dirty rags. We also noted that some of the machines threw a spray of oil into a mist that filled the air around the workers, causing it to settle on the face as well as on other exposed parts of the body.

In a pickling department, we noted that the pickling solutions were used hot, and that the air was loaded with fumes from the acids. One of the men working here had a rash covering his face, evidence that the acid was affecting his skin. This demonstrated that the coating used with the oils and solvents must be non-soluble in these chemicals, and that the coatings supplied should be safe to use on the face as well as on the hands in order to give safe protection.

DANGERS OF A HIGH pH

Since the skin as well as the natural oils of the skin are acid, with a pH of about 5.5, it is important that the skin protective coatings are on the acid side wherever possible. In no case, however, should the coating with a pH of more than 8.0 be used in a plant. What is meant by pH? It is sufficient for the purpose to say that distilled water has a pH of 7.0, which is considered the neutral point. Below that we have a higher concentration of hydrogen ions, the acid side; and above 7.0, a lower concentration of hydrogen ions, the alkali side. A soap with a pH of 10.5 would never be considered fit for anything but the laundry, yet there are skin protective creams with this high pH.

A skin protective cream with that much free alkali will simply emulsify the oils in the skin, thereby removing the natural protection to the *derma* (underlying layers of the skin) and leave them open to infection.

TROUBLE-MAKERS

In plants where we worked among the employees for several months, we found the greatest trouble with dermatitis was among workers coming in contact with the various types of cutting oils and lubricants, and the emulsified types of cutting oils as the greatest trouble-maker. Zinc chromate primers, chromic acid, sodium di-chromate and pickling acids were next on the list, with kerosene and solvents following, particularly the chlorinated solvents—the worst offender of all.

SUMMARY OF REQUIREMENTS

We came to the conclusion, from the work done in the plants, that the type of skin protective coatings giving the most protection to the workers should have the following qualities:

1. It should leave over the skin a dry protective film unaffected by water, flexible, and readily removable with hot water and soap.
2. It should contain a skin conditioner that will not only guard the skin against moderate surface damage, but also help to restore the flexibility to a dry skin, and thus reduce the danger of skin infection.
3. It should be able to withstand perspiration and to absorb the bulk of it without sealing the horn cells, leaving them free to function normally.
4. It should reduce the radial heat of the skin, giving a cool sensation when applied.
5. It should contain a non-irritating antiseptic agent that will have a bacteriostatic action against germs carried onto the skin by dirty rags, and that, combined with the oils and waxes in the product, will also have a healing action on an already irritated skin.

They Say:

Approximately 24,500 businessmen who are members of the Committee for Economic Development in 1230 communities in every state of the Union, are now working toward the goal of greatly expanded peacetime production and employment after the war, in close cooperation with businesses representing nearly three-quarters of the industrial capacity of the Nation. This announcement was made by Paul G. Hoffman, president of The Studebaker Corporation and chairman of the Board of Trustees of The Committee for Economic Development in a summary of CED's 1943 work, which he described as a "report to the nation."

* * *

The decisions we make today on current problems will probably have more to do with postwar conditions than the "plans" we are writing on paper, says Ralph Bradford in *Nations Business.*

It is a mistake to think of the postwar as a period that will require a new and special kind of magic. The problems we will have to face will be the same —unemployment, debt, taxation, the development of industry, the planned growth of cities and so on.

The approach to all these problems must be that of the national interest. Solutions based on group interests will produce confusion and struggle among the various groups. Such procedure will lead to disaster because it will focus at Washington, and will create still more strife. Those who would think about the postwar period must do so first as Americans.

* * *

Drafting of proprietors into the armed forces was responsible for more than 25 per cent of all drug store closings during a five-month period, the National Wholesale Druggists' Association has revealed in announcing results of a survey of drug store closings, conducted for the Association by Dun and Bradstreet.

The report on the survey was prepared by the Committee on Credits and Collections under the chairmanship of Robert Morrisson of Cook, Everett & Pennell, Portland, Maine, and is among the previously unpublished reports contained in the forty-third annual Year Book of the Association, which is now being distributed.

* * *

The postwar American chemical industry will employ considerably more workers than in prewar years, and chemical plants are ready to swing over to peacetime production the day the war ends, Charles A. Higgins, president of Hercules Powder Co., reports in his 1943 review.

The chemical industry as compared with other major industries engaged in the war program faces hardly any problem of reconversion to peacetime production, because its products are essentially "intermediates," he said, and will not change.

World-Wide Survey of Oil of Lavender

Highest quality of this popular oil is from Southern France. Decline of the wild plant and difficulties in cultivation are important factors in market prices

by DR. ERNEST GUENTHER
Chief Research Chemist, Fritzsche Brothers, Inc., New York, N. Y.

OIL OF LAVENDER, one of the most popular volatile oils, has for many years been produced almost exclusively in Southern France. Indeed, the French oil excels all other types in regard to quality, which finds its expression in a characteristic sweetness of odor; certain sections of Southern France produce lavender oils with a high ester content unequalled elsewhere.

Other, but much less important producing regions, enumerated according to output, are in Italy, Southern Russia, Hungary, England, Australia (Tasmania), the United States (Puget Sound), and in a few other countries on an experimental basis.

Because of present war conditions it is impossible to estimate the production of lavender oil in each country; it is probably greatly curtailed. Prior to 1939, France supplied approximately 80 per cent, if not more, of the world's lavender oil consumption.

A view of the rolling hills of Southern France, where the hardy lavandin plant grows wild.

FRAGRANT MOUNTAIN SHRUB

Lavandula officinalis Chaix, according to Green[1] the correct designation for true lavender, is a small shrub with linear leaves and terminal spikes of small, bi-labiate, lavender colored, highly fragrant flowers containing a volatile oil which can be isolated by steam distillation.

The pretty plant, a native of Mediterranean regions, grows spontaneously on the dry and barren, sunny mountain slopes of Southern France and adjacent Italy. Lavender prefers loose, silico-calcareous soil, and has invaded many farmlands of insufficient fertility, abandoned years ago when the beginning industrialization of France drew its rural population to the cities. A relatively hardy plant able to withstand, while dormant, the cold winter storms which rage over the high snow-covered mountains, it develops most profusely after heavy rainfalls in spring and ample sunshine in summer.

Lavender grows most luxuriantly between rocks, along the roadsides and on inaccessible precipices. During the blooming period, late July and early August, the distant mountain slopes in the setting sun often glow in bluish shades of indescribable delicacy.

VARIETIES OF LAVENDER

There exist several varieties of *Lavandula officinalis* Chaix (*Lavandula vera* D.C.), each having its natural habitat in a different altitude and each yielding an oil of different quality. The question whether distinction can be made on strictly morphological grounds or whether these varieties should be considered merely as local ones, depending upon soil, climate and altitude, is still open to dispute.

I. *L. officinalis* Chaix var. *delphinensis* Jord.

The small form (*petite* or *fine lavende*) grows wild on poor soil, in the highest altitudes (up to about 1300 meters), and more northern sections of the Départements Basses-Alpes, Drôme, Vaucluse and Hautes-Alpes. It is relatively hardy and resistant to climatic inclemencies, such as extreme cold, fog, rain and exposure to strong sunlight in summer. Var. *delphinensis* produces the finest quality of oil.

II. *L. officinalis* Chaix var. *fragrans* Jord.

The slightly larger form (*moyenne lavende*) also grows wild but in somewhat lower alti-

[1] *Bull. Kew*, 1932, 295.

tudes (from approximately 500 meters upward), and more southern sections of the same départements. It prefers the dry slopes of hillsides; produces an oil of slightly lower quality.

Var. *fragrans* has also been extensively cultivated, as we shall describe later.

III. *L. officinalis* Chaix X *L. latifolia* Vill.

Lavandin (*grosse lavende*) is a hybrid between true lavender and spike lavender, growing wild in medium altitudes and yielding the lower-priced oil of lavendin, stands between true lavender and spike. (The designation "oil of spike" or "oil of spike lavender" is derived from the French term *aspic* and has no connection whatsoever with the "spikes" of the plant.)

As a hydrid, lavandin is a very hardy plant, giving a better yield of oil than lavender. Because long lived and high yielding, many lavandin plantations have been started during the years preceding the present war, with a resulting large increase in the production and consumption of lavandin oil.

IV. *L. latifolia* Vill.

Spike or spike lavender (*grande lavende*) grows wild in low altitudes. Spike lavender is not planted, as it occurs profusely in Spain, the present main producing regions of spike oil. The latter is of still lower quality than lavandin; it possesses a somewhat harsh, camphoraceous odor, lacking the sweetness of true lavender.

QUALITY OF OIL

From this classification it appears that the highest altitudes produce plants yielding the best oil, while plants from low elevations yield oils of lowest quality with a whole range of intermediary grades between the two extremes. Incidentally, the quality of lavender oil is now evaluated mainly by its ester (linalyl acetate) content: provided it is properly distilled, lavender var. *delphinensis*, which occurs in the highest altitudes, yields oils containing 50 to 52 per cent ester, while *L. latifolia* from the low elevations gives oils containing only 2 to 3 per cent ester.

This, however, applies only to wild growing plants. It has been proven that true lavender with an oil of high ester content can be planted successfully also in low altitudes, even at sea level, if due precautions in regard to climate, soil, cultivation and against hydridization are taken.

EFFECTS OF WEATHER

The amount of lavender harvested every year in Southern France depends mostly upon weather conditions. Frosts, especially in the springtime and continued heat without rain in summer, are the principal causes of a poor crop; while absence of frost, abundant rain during May and June with a few good showers in July, favor a plentiful harvest.

WILD GROWING LAVENDER

On the sunny hillsides and mountain slopes of the Départements Basse-Alpes, Drôme, Vaucluse and Hautes-Alpes, the wild herb grows profusely. The most beautiful plants seem to be located among heaps of stones or rocks. The wild plant has also invaded many of the farms abandoned before World War I; in fact, it has multiplied to such an extent that the overcrowded plants often remain small and sickly, the cutting thereby becoming burdensome. Many steep, mountainous slopes, where the plants grow abundantly, are too dangerous of access.

WILD LAVENDER DECLINES

Such, at least, was the picture until about ten years ago. In the early 1930's there occurred a strange, still largely unexplained decline in the growth of natural lavender. From some sections, where formerly wild lavender grew abundantly, the flowers began to disappear, other sections being less affected. On the way into the lavender mountains, starting from Grasse, it was customary to stop along the road between Castellane and Barrême and pick a bunch of the lovely, fragrant lavender flowers growing profusely near the roadside. In 1936, one had to climb between the rocks and search to find a few lonely flowers.

To give a more exact idea, the following figures were suggested to the author by old-time distillers:

	1930 Tons	1936 Tons
Flower harvest around Ballons	55	2
Flower harvest around Lachoux	80	6
Flower harvest around Aygalaye	20	2

In certain parts of the community of Sahune (Drôme) there were harvested:

1928	1936
35 Tons of flowers	5.5 Tons
42 Tons of flowers	7.5 Tons

What caused the gradual disappearance of wild lavender flowers? A few theories were suggested by experts, none fully explanatory, some contradictory. Maybe several factors were responsible. Some claimed that the soil was slowly getting tired of lavender, that during those past years it had been getting increasingly exhausted as far as lavender was concerned.

POSSIBLE EXPLANATIONS

Others attributed the gradual disappearance of wild lavender flowers in certain sections to the increase of weeds like *genêt* (broom) which crowds out and suffocates the more delicate lavender. In former years, large flocks of sheep and goats used to graze on the mountain slopes and munch the weeds in preference to the fragrant lavender. However, during the years of world depression (1929-1933) the sheep raising in Southern France suffered a serious setback and some of the mountain sections became almost deserted. The opinion that lavender is easily crowded out by weeds confirms the view that wild lavender, especially on the more accessible slopes, should be plowed under from time to time, permitting the remaining lavender plants to acquire more room to grow freely.

Other lavender experts believed that the wild lavender in past years was often cut too early and, incidentally, too low, which practice damaged the plants. (If on the other hand, harvested rather late in the season, the plants should not be cut too high.) As far as insect pests and diseases are concerned, some lavender producers claimed that they did considerable harm in certain sections.

Another explanation might be the following: More than fifty years ago consumption and production of lavender oil was small and most of the wild plants remained untouched. They were used to growing without any cutting. During the following years, ever-increasing quantities of wild flower material were harvested, and the plants gradually became accustomed to being cut during the full flowering period when, physiologically speaking, the plant has to exercise the greatest efforts. The cutting at that moment spared the plant much work and made it metabolically laggard. However, during the years (1929-1934) of very low lavender oil prices, much of the wild lavender was not cut at all. Thus the wild plants were allowed to develop longer stalks and larger leaves. With this coincided two years of excessive drought which caused the larger stalks and leaves of the plants to evaporate a great deal of moisture. In other words, the plants exhausted themselves.

RESULTS OF DECLINE

Whatever the causes, the result was

that wild-growing lavender disappeared in certain sections. Therefore, the plant material had to be collected in more and more remote sections where the wild flowers were not yet afflicted. Cutting in those regions, however, is more costly and undertaken only if high prices are paid for the oil, thus allowing for greater harvesting expense. There is no reason to fear that wild lavender will disappear, but the fact remains that a relatively large quantity of lavender oil can be produced only if high oil and flower prices encourage the cutters and distillers. Whenever lavender oil prices suffer a serious decline, production of the oil falls off to low figures.

Thirty or forty years ago, lavender oil was distilled exclusively from the wild-growing plants, planting and cultivating not having come into vogue then. Even today a good percentage of the total production of lavender oil is distilled from the wild plants. One man can collect daily about sixty kilos of wild plants. Because of the scattered growth, the yield of wild lavender per acre cannot be estimated.

HARVESTING THE FLOWER

Since the mountain slopes are mostly the property of the various communities, the villages each spring auction off the right of harvesting the wild flowers within their territory. These adjudications present an event of considerable interest to the oil producers. The buying of such rights assures the distiller a guarantee for the supply of a given quantity of plant material and enables him to lower the price of other lots of lavender flowers, originating from other sources. The regions where gatherers of lavender can cut freely on community territories or on private property are becoming fewer and fewer. The most important adjudication is that at the Mont Ventoux which covers more than 2300 hectares.

In the past years it has become increasingly difficult to find labor for harvesting the wild-growing plants. Up to 1927, Italian labor was imported for the purpose, but since then the Italian government has prohibited emigration of seasonal labor.

PLOWED WILD LAVENDER

For these reasons the collecting of wild lavender decreased in past years and methods of cultivating had to be introduced. The simplest way is to plow through a field of wild lavender, the plow being pulled by a tractor or horses. The ground is turned over once and back again. Many plants are thereby destroyed but those surviving gain space and access to air and develop better. Rain penetrates into the loosened soil and a more abundant harvest results. This work evidently can be carried out only on slightly inclined slopes and not on the steeper hills or mountains. Plowing results in a small harvest during the first year, a more abundant harvest in the second and third year, a notable decrease during the fourth year, and a still further decline in the fifth year. However, under favorable climatic conditions one may still harvest where it was not worthwhile to cut before plowing.

For plowing, a natural lavender field is divided into four or five sections and one section plowed annually. Since only one-fourth of the field is plowed every year, the cost of labor remains low. It is difficult to approximate the average yield which ranges from 400

Cultivated lavender plants in Vaucluse.

to 600 kilos of plant material per hectare for the second harvest after plowing.

PLANTED LAVENDER

As far back as 1910, experimental lavender plantations were started by a number of distillers. Aside from an independent and regular flower supply, plantations promised lower cost of cutting. Cultivated lavender grows much higher and permits quicker cutting, one man being able to harvest daily several times the quantity as compared with wild plants.

During, and especially right after, World War I, the planting of lavender was advocated in agricultural journals throughout the producing regions of Southern France and much was expected from this new development. Unfortunately, those high hopes were not entirely fulfilled. After several years of rather disappointing experience, the disadvantages seemed to outweigh the advantages. One of the gravest handicaps is the rather high cost of initial investment which has to be written off and, therefore, increases the overhead expenses of the enterprise. Even more disastrous was the unexpectedly short life of the plantations. Whereas some lavender plantings lasted up to eight, ten and even more years, many perished after three to four years, thereby causing heavy losses to the owners. Soon it became evident that a lavender plantation was a paying proposition only if it formed part of another agricultural enterprise. In other words, a small farmer growing cereals and olives could devote his and his family's spare time to the cultivating of lavender. But the plantations started by large scale distillers for their own independent flower supply proved to be a rather expensive venture, bringing the cost of the flower material and, therefore, the cost of the oil far above the level of those oils produced by small grower-distillers.

ADVANTAGES OF SMALL FARMER

It is interesting to note, in this connection, that through this development the lavender industry of Southern France experienced an almost complete cycle proceeding from the early days of distilling wild-growing plants in portable stills toward large-scale plantations and regular factory distillation, and reverting to small scale operation in portable stills operated by farmer-producers who today employ as raw material either wild-growing flowers or flowers from their patch plantings. A large enterprise specializing in the growing and distilling of lavender is connected with heavy overhead expenses, such as labor, mechanics, foremen, managers, office force and taxes, and this in addition to the fact that the factory operates only for a few weeks during the whole year. In other words, all overhead expenses must be borne by one product, viz., lavender oil. The small farmer, on the other hand, does not count his and his family's labor; he has no overhead expenses to speak of, does not and cannot calculate the cost of his oil, simply sells it at the prevailing market price. It is, therefore, not surprising that a large distillery can hardly compete with the small producer .

PLANTING AND CULTIVATING

Silico-calcareous, loose, easily drained soil is best suited for the growing of lavender. The ground is plowed, as in vineyards, hoed and leveled.

Lavender may be planted by several methods:

1. By seed
   Since lavender seed possesses a very hard pericarp, it must be kept at room temperature, in humid sand or sawdust, for some time in order to bring about germination. As soon as the young shoots emerge they are transplanted into nurseries and frequently watered. After several months the plants can be transplanted into the open fields.

2. With cuttings—"bouturage"
   This method does not always succeed very well; it demands considerable cultivating and frequent irrigating which often leads to its abandonment. The cuttings should be raised for some time in nurseries before the final transplanting to the fields.

3. With young wild plants
   Some lavender growers give preference to young plants taken from elevated altitudes where only the best lavender is found. These plans are less expensive than those from seedlings and hardier because they originate from very poor ground and from a severe climate. However, these wild plants must be carefully selected and collected when very young. This is usually done during May; they are then raised in a nursery for a half year, frequently watered and, during the fall, transplanted to the open fields.

METHODS OF PLANTING

In past years lavender was planted at a distance of 1.25 to 1.50 meters between the rows and 0.60 to 0.75 meters between the plants; later it was found that 1.70 to 2 meters between the rows and 0.50 to 0.60 meters between the plants gives better results. This means approximately 10,000 plants per hectare. It was believed that the plants, if set out close in the rows, have a better opportunity to combat weeds and drought. On the other hand, a larger distance between the rows is preferable for cultivating.

During the first two years, one annual tilling in fall or winter should be undertaken, followed by one or two superficial tillings with a cultivator, and finally by at least one hoeing. After the second year, the hoeing may be omitted.

HARVESTING OF PLANTS

Although the yield is insignificant in the first year, and small in the second year, the young plants must be cut, care being taken not to injure them. The third year produces the first sizable crop which increases during the fourth and fifth year.

Despite many attempts, the French lavender growers never succeeded in constructing machines for the harvesting of planted lavender primarily because the stalks bend from the base of the stocks toward the periphery and, in fully matured stocks, almost touch the ground with the flowering tops. Therefore, lavender, wild or planted, is always cut by hand. In a well-developed plantation a skilled cutter can daily collect several hundred kilos of plant material (flowering tops and stalks).

YIELD OF PLANTS

Theoretically, one lavender stock, when cut, should yield from 500 to 600 grams of stalks and flowers. Ten thousand plants on one hectare should, therefore, give about 5000 to 6000 kilos of plant material. In reality, however, from the third year on, a yield of 2000 kilos per hectare is considered normal and a yield of 3000 kilos quite satisfactory.

FERTILIZING

Autrand and Farrdard[2] reported that the most prolific growth is obtained by fertilizing with nitrogen in the form of sodium nitrate or ammonium sulfate, while potassium salts are harmful. For a high yield of oil per acre, these authors recommended fertilizing with nitrogen and phosphates.

OIL DEVELOPMENT

Charabot[3] showed that the content of free linalool and acetic acid decreases as the plant develops annually, while the content of linalyl acetate increases and reaches its maximum during full bloom. At that moment the plants should be cut and distilled.

LONGEVITY OF PLANTS

As said, many of the newly started plantations perished prematurely. This has been attributed to faulty cultivating, to soil conditions, especially to the exposure of the field. Undoubtedly a severe drought can be disastrous to a plantation located at low altitude with a particularly hot exposure. Yet, the same phenomena have been observed in altitudes of 700 meters and more; therefore, failure of a plantation may be caused principally by soil conditions, perhaps by insufficient porosity. Unfortunately, the chemical composition of the soil required for successful lavender growing has never been studied systematically.

A survey made in 1934 by Bordas, Joessel and Aurès of the Agricultural Station in Avignon in cooperation with Prof. Dumont of Nyons (Drôme),[4] claims that the mortality of the lavender plantings is not due to any parasitic plant disease but rather to the careless, in fact, ignorant way most new plantations were started after World War I. The high lavender oil prices paid in the years following that war induced many peasants to start plantations of true lavender under conditions and in locations where lavender should never have been grown. Planting and cultivating of lavender requires infinitely more care and experience than is usually presumed.

REQUIREMENTS

According to Bordas, Joessel and Aurès, certain fundamental rules must be observed:

1. Selection of a suitable location and altitude; exposure to the north affording protection against excessive sun and drought; well chosen local climate and soil composition which must be silico-calcareous, easily permeable, neither too hot nor too humid.
2. Proper way of planting and cultivating; cautious selection of young but strong plants; very careful weeding and cutting.

Exposure to the north, proper composition of the soil and careful planting seem to be of prime importance. There is no doubt that pools of stagnant water remaining around the plants after a downpour are deadly to the plant.

OPINIONS OF GROWERS

During the summer of 1936, the author, as in previous years, undertook a survey of the lavender producing regions and consulted many growers and distillers with long experience in the cultivating of lavender. There was a surprising divergence of opinion, sometimes directly contradictory, but most agreed that in general the views expressed by Bordas, Joessel and Aurès hold true. Some growers claimed, however, that there must also exist, at least in certain localities, a root disease because lavender roots pulled out appeared white and almost powdery. Others attributed the premature dying of lavender plantations to the dropping of the upper stalks and seeds which they believed to be caused by recent attacks of a caterpillar. This view was later confirmed by Pussard,[5] who reported that the caterpillars of a tiny butterfly, *Sophronia Humerella*

[2] *Office Regionale Agricole du Midi*, 1923, No. 7, p. 1.
[3] *Compt. rend.* 130 (1900), 257.
[4] *Parfumerie moderne*, 28 (1934), 223.
[5] *Parfums France* 15 (1937), 128.

Schiff., attack the inflorescens and often completely destroy the plant. Pussard recommended spraying the plants in spring with a nicotine soap solution.

General consensus indicated that a multitude of factors were responsible for the rather alarming mortality of lavender plantations. An old grower and distiller in Ballons (Drôme) expressed the opinion that the decline of lavender is probably caused by some kind of disease which, however, was aggravated by the excessive drought of the two years previous to 1936. A plantation started by him gave only one harvest, in the third year. Immediately afterwards, it died.

OTHER MORTALITY CAUSES

Most interesting was an interview with a well-versed agricultural expert in the Basses-Alpes who attributed the premature mortality of lavender plantations to the following causes:

1. The plants were often planted in rows too close. The roots of lavender are easily damaged by plowing. Instead of deep plowing the soil only should be hoed.
2. In most cases the plantations were fertilized too late in the season. It is often done in April during plant growth, instead of in November during the periods of abundant rains. Osmotic pressure thus forces the plants to give off their water content into the surrounding dry soil charged with fertilizing salts. The plants therefore dry out and perish.
3. It is still open to dispute whether new lavender plantations should be started from selected young plants or from selected old plants growing wild on mountain slopes. The older plants have already withstood all kinds of attacks and, therefore, give more assurance of continued life if planted in proper environment and cultivated with proper care.
4. It is by no means sure yet that lavender really is ready for cultivating. Lavender so far has grown wild for ages on mountain slopes, and it might take many more plant generations before the plants accustom themselves to the richer and easier life in plantations and withstand it for a prolonged number of years.

CLUES

Several years ago the author had occasion to survey lavender production in Hungary and learned a few facts about cultivating and harvesting which the French growers seemed to have overlooked. They may well be the clue and the answer to the French lavender producers.

It has become difficult to find laborers like these for cutting the wild plowed lavender.

PRICE FACTORS

Whatever the causes, the fact remains that practically all the rather carelessly and even some of the most carefully started lavender plantations were rapidly dying out. Thus, they did not give the expected returns and completely discouraged the peasants of the French lavender regions in replacing the disappearing lavender plantations with new ones. It must be remembered that the planting of lavender is a rather costly enterprise requiring the investment of considerable capital. Returns cannot be expected for the first three years and, in order to write off the investment and show profits, a plantation should survive, always depending upon the market prices of the oil, for eight to ten years. However, many plantations died after five to six years, some even earlier and, therefore, practically no new lavender plantations have been started during the years previous to World War II. The growers will be induced to replant only if lavender oil and, therefore, flower prices are high enough to warrant the risk, even if the life of the plantations should be short. Practically, it does not matter if a plantation dies after four or five years, as long as the returns during those few years leave sufficient profit. In other words, French lavender oil distilled from planted lavender flowers demands, and is dependent upon, a good market price.

The cost of planted lavender, however, is not the only factor upon which the price of the French lavender oil depends. In fact, it has become a factor of less importance because a good part of French lavender oil is distilled, as formerly, from flowers growing wild on the mountain slopes. Even during the years of numerous and plentiful lavender plantations, preceding the general decline, two-thirds of lavender oil was produced from wild and one-third from planted flowers. Collection of wild flowers, however, is much more difficult, tedious and therefore, expensive, as we have pointed out previously. The quantities of planted flowers used to be sufficiently large to prevent a too high rise in the prices of wild flowers and vice versa. Thus, there exists a ratio between the harvest of wild and planted flowers which acts as a sort of mutual brake, but this equilibrium can easily be upset by a further decline of the plantations or of the wild flowers available.

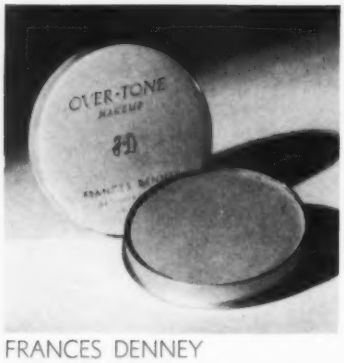
Suspension Continued on Deliveries of Crude Edible Oils

The War Food Administration has authorized a continuance through June 30, 1944, of the suspension of restrictions on delivery of crude cottonseed, peanut, soybean and corn oils to refiners for refining.

Authorizations for delivery of crude oil to users, other than refiners, still must be obtained from the WFA's Office of Distribution, and regulations with reference to use of the four oils, or the shipment of refined oil by refiners to other refiners and margarine and shortening manufacturers, remain the same.

Allocations for use will be made during March for April, May and June, and applications should be mailed by March 10 to the Fats and Oils Branch, Office of Distribution, War Food Administration, Washington 25, D. C.

Packaging PORTFOLIO



FRANCES DENNEY

CONGO

EARLY AMERICAN OLD SPICE

DELETTREZ

PRIMROSE HOUSE

FRIENDSHIP GARDEN

FRANCES DENNEY: Overtone, a cake form make-up, put out in six shades, ranging from "Soft" to "Argentine". The box is circular, of pale blue cardboard with wine lettering and has a gold monogram and base. It is claimed to conceal blemishes, leaving a satiny finish

CONCO: the exotic new Eau de Parfum by Toujenais of California. The brilliant fabric - covered wooden cap is printed with vivid green leaves on a sunny yellow background and the individual cartons carry out the jungle theme with a similar design of palm leaves

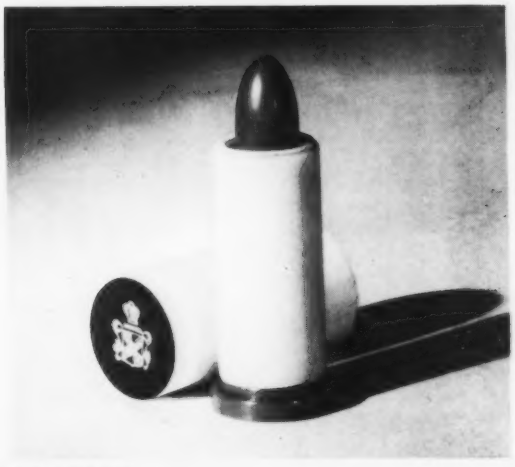
EARLY AMERICAN OLD SPICE: perfume appears in a new package, and in three different sizes. On the cover of the oval, stand-up box are two early American ladies against a cream background. The bottles, on a gold-encircled platform base, are encrusted with the gay Old Spice lady

DELETTREZ: Special Skin Wash for the back and elbows. This granulated cream wash is made to rid the skin of imbedded impurities, and excess oiliness. The jar is of white porcelain with a wine metal cover. The label is also white with wine and silver printing

PRIMROSE HOUSE: Chiffon make-up base a non-drying cream foundation said to protect the skin and absorb perspiration, preventing shininess. It comes in a new scarlet plastic container with a patented wedge lock closure. This takes only one-eighth turn to open and close

FRIENDSHIP GARDEN: Dusting Powder in a new large size. The white background of the large round box is decorated with pink, blue and yellow flowers and a girl in a pink skirt. The box may be kept clean with a damp cloth. Also in a large size is the powder puff enclosed

HOUBIGANT



DELETTREZ

HOUBIGANT: Translucid Skin Lotion and retiring cream. The lotion, formerly obtainable only in "Quelque Fleurs" scent is now available in Translucid. The special emollient retiring cream is called "a blessing to dry skins". The bottle has a white plastic top, the jar a cover of blue plastic. The labels for both are crossed with red lines. Translucid line also includes face powder, foundation, cream rouge

ANN HAVILAND

ANN HAVILAND: Wood Violet set includes body powder, perfume, eau de toilette, talcum powder, bath oil and sachet, all in the fresh violet fragrance. On top of the white octagonal cardboard box of body powder is tied a large corsage of wood violets. A smaller sprig of violets is also attached to the pillow sachets. These come singly or in a three decker group of various sizes. They are hand-sewn and of satin

DELETTREZ: Lipstick is now featured in a new shade — Wildflower Red. This rich deep-orange tone was blended to go with the new citrus or the flaming jungle colors in clothes, and is recommended for summer tans. Like all Delettrez lipsticks, it is said to have a rich, moisture-content consistency, and appears in the white plastic tube with the white crest against a contrasting background on the top

MAISON JEURELLE

MAISON JEURELLE: Bath set, which comes in the fragrances of Blue Field Flower Central Park, Libretto, and 6:30, consists of body sachet, bath foam, and cologne concentrate. The body sachet and bath foam are in cylinder-shaped containers with shaker tops, and the cologne in a flask-shaped bottle. The three are packaged in a pink box with a blue base, and decorated with a motif of the tiny flowers also on the labels

T. G. A. Expects Record Meeting May 18-19

Two-day streamlined convention including evening Scientific Session to take up pressing war-time and post-war problems . . . Government officials to give first hand information

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H. P. Willats
Vice-President

CHEMISTS AND OTHERS INTERESTED in the scientific aspects of the cosmetic industry will gather together on the evening of May 18 to consider subjects relevant to the production problems of the industry at the present time and to discuss the after war picture as it relates to the manufacture of toiletries. The meeting will be a feature of the forthcoming ninth annual meeting of the Toilet Goods Association to be held in the Waldorf-Astoria hotel, New York, N. Y., May 18 and 19.

Everything points to a record attendance at the convention. The meeting will be streamlined to accomplish in two days what normally in peace time takes three days. There will be the usual stimulating reports from the president and director of the Board of Standards and the always interesting report of the counsel for the association. Representatives from various government agencies such as the War Production Board and the Office of Price Administration have been invited to take part in the program and current questions will be answered as usual following the addresses. A representative from the Army Exchange will also be present to discuss plans for the disposal of surplus commodities. All of the foregoing as well as reports from chairmen of various committees, will be disposed of on the first day and the morning of the second day. The final afternoon session on the second day will be for manufacturers only and will be a closed session.

On account of the war there will be no entertainment features and no banquet. On the other hand luncheons which always provide an excellent opportunity to renew acquaintances, make new friends and discuss individual problems in a social way will be held as usual.

The convention committee, as usual, will supervise registration and generally see that things run smoothly, that members and new members are introduced and generally be of help. The committee is made up of LeRoy Root, chairman; Philip Haebler, Milton Martin, Charles Fischbeck, Karl Voss, Michael Lemmermeyer, William P. Murray, Walter E. Klaas, A. C. Burgund and J. B. Walker.

In a letter to members President Brooks says in part: "For the past few years the annual meeting has been open to members and non-members alike, and again the Board of Governors decided that anyone who has an interest in our industry affairs will be welcome.

"Realizing that time is of the essence we shall have only a two-day meeting. Both of them will be full ones without overtaxing your endurance and patience. Each session will start promptly at 10 a. m. and will last until 5 p. m. with lunch intervening.

"The program committee is endeavoring to invite speakers who will devote themselves to topics of current and post war interest and included among them will be representatives of the Government from those bureaus with which our industry has constant contact.

"We trust that you will advise us promptly of your attendance so that everything will be taken care of for your convenience and comfort. We hope that you will also bring with you your associates."

How Spices Play Their Part in the War Effort

Despite shortages, the spice industry meets the increased demand stimulated by requirements of war-time recipes, canning, army needs, growing appetites for new spices

by L. W. JONES

Spice Agent, McCormick & Co., Baltimore, Md.

WHILE THE WAR has brought many headaches to the spice industry due to government restrictions and the loss of producing countries, nevertheless one of the biggest benefits has been the winning of converts to well seasoned foods. It is reasonable to believe that a good percentage of the women who are now learning to use seasonings to make leftovers and the less expensive cuts of meats palatable, will continue to use same when the war is over.

The switching around of our population has also caused the establishment of new food habits. Many persons have for the first time become acquainted with spicy flavored foods and will want to eat them the rest of their lives.

ARMY EXPERIMENT

Our government has schooled thousands of young men in the application of well seasoned foods. In an address by Col. Isker of the Quartermaster Depot in Chicago, he told of an experiment to determine the effect of seasoning in foods. A group of men doing identical work was divided into two sections and they were given the same food for the same length of time, with the exception that seasoning was added to the menu of one group and omitted in the other. After a couple of days the men who had been eating the seasoned food were still in good condition but the others were unable to do their work. This proves the necessity for well flavored and well seasoned foods.

Home canning has played an important part in the increase of spices, especially in the making of pickles, catsup, chili sauce, and similar relishes.

EXTENT OF SHORTAGES

Though the war has brought about shortages of many spices, there is still a good supply of black pepper, paprika, cloves, ginger, red pepper, chili powder, nutmeg and mustard. Mustard which was formerly imported is now grown in this country in sufficient quantity to take care of the demand. The production this year was very good. Unfortunately, the production for next season does not look very favorable, due to the dry spell which has prevailed for several months. While our armed forces have used considerable quantities of mustard there was enough grown in this country to take care of our armed forces as well as the civilian needs.

The shortage of spices is most keenly felt in cinnamon, cassia, and supplies of spices formerly coming from the Netherlands East Indies, now Japanese occupied. Stocks on hand with manufacturers are very limited, and while some manufacturers have placed on the grocery shelves imitation spices to fill this gap, there are no imitations of substitutes that will take the place of natural spices.

FOOD STRETCHERS

In stretching foods which the civilian population is able to get, there is a very noticeable increase in the use of chili and pickling spice. Poultry seasoning used in stuffing makes meat and other proteins go farther and has played an important part in making acceptable such foods as hearts, lungs and livers. Chili has long been a popular spice in the south and southwest where it is a staple for many menus. Soldiers who were trained in sections where it was frequently served, quickly developed a taste for it. Army cooks in other regions took it up and manufacturers fell into line by putting up small containers of chili powder in order to take care of the demand.

SELLING SPICES

The spice industry has been growing for several years. It has met the challenge of war time with intelligence and optimism. It has been actuated not only by a desire to establish new markets but also by the realization that grocers would welcome unrationed food stocks to offer to their customers. Our company has helped its dealers merchandise spices, as well as other McCormick products, in various ways. It supplies them with attractive spice

racks, display material, as well as a full line of spices, which makes it possible for the consumer to purchase any spice she so desires in order to season the meal she is preparing. We keep them informed of advertising procedures through bulletins reproducing scheduled insertions for 12-week periods. Copies of advertisements are supplied in pad form so that at the point of sale women may detach sheets as wanted. Recent copy themes have been "Do your canning after sundown—chili sauce time is here—pickling time is here—chunky pickles—use McCormick Pickling Spice this season—oven made apple butter."

In order to further assist in making foods more palatable, McCormick puts up specialties such as onion salt, garlic salt, and celery salt, all of which enjoy very good sales, are advertising celery salt for many dishes and recommend this item for salad dressing, stews, stuffings and casserole dishes. When the war is over and our boys come home they will undoubtedly bring with them well developed tastes for spices and condiments. Our civilian population which has been educated to use spices will continue to want well seasoned dishes even when they are no longer required to eat such cuts as the livers, hearts, etc.

FAIRLY GOOD SUPPLY

As far as the supply of spices is concerned there is a fairly good supply in retailers' hands when taking into consideration the conservation orders, and these spices will continue to move for the next four or five months through these channels in about the way they have in the past year or year and a half. We may, however, see a shortage of some of these items along about the fall months of this year unless our government works out some plan to bring more spices in from those countries from which they can still be shipped. The most critical at the present time is cinnamon, the next is pepper, and the third is nutmeg.

FUTURE TRENDS

We believe that in the near future pepper will ease up whereby there will be a steady movement through the regular channels. Of course at the present time many suppliers of whole pepper are without stocks. A brief has been filed with the O. P. A., and their action on the brief will determine whether or not pepper will move from the stocks which are in this country. Only one or two small lots have been received in this country since Pearl Harbor, and no arrangements have been made by our government to replace stocks in this country. Nutmegs are moving in fairly well and the critical situation which now prevails should be cleared up in the next two or three weeks.

Sage, which at the beginning of the war was extremely scarce, is moving in good quantities, thanks to the growers in this country. Red peppers are in good supply at the present time but we may see a shortage in 1945. Ginger will become scarce due to the fact that nothing is being shipped from Africa, and only a small percentage from Jamaica. The Indian situation does not look good, therefore we are liable to see a very short supply. Turmeric is in the same category as ginger and we may see a shortage of this item by the fall of 1944. The remaining items should be sufficient to take care of the country's requirements. If our government acts on the scarcity items quickly the situation on the above items should be corrected.

All in all, the importers, brokers, dealers, grinders and packers have done a splendid job in seeing that our armed forces as well as civilian trade have been taken care of since Pearl Harbor, and unless something unforeseen takes place we should see a supply of spices moving steadily for the duration.

Sugars and Products

CUBAN SUGAR HARVEST

The 1944 Cuban sugar harvest began on January 2, and 41 mills were in operation at the end of the first week. A total of 158 mills will operate in the 1944 season—one more than in 1943.

Preliminary reports indicate large cane yields as a result of excellent growing weather. When the grinding season started, the sucrose content was considerably below average as a result of the high moisture content of the cane and the early opening date. Sucrose content generally increases as the season advances, reaching a peak in March.

BRAZILIAN SUGAR CROP

Brazil's sugar production for the 1942-43 crop year ended May 31, 1943, amounted to 21,468,324 bags of 60 kilograms each (1 kilogram = 2.2046 pounds), according to a press statement published in Brazil.

Sugar consumption in Brazil in the 1942-43 crop year totaled 19,980,637 bags, compared with 20,704,472 bags in the preceding crop year, the same source states.

MEXICAN HONEY PRODUCTION

Prior to the outbreak of the war the bulk of honey exported from Mexico went to Germany, Belgium, Great Britain, and other European countries, but in 1943 exports to the United States totaled 7000 metric tons compared with 2045 tons in the preceding year. Exports to all countries for the years 1938 to 1942 averaged 1408 metric tons with an average value of 523,246 pesos for the period.

Honey production in Mexico is not confined to any single area. Many individuals maintain a few hives to supply the needs of their families and sell the surplus to representatives of exporters and large dealers. The buyers ship their purchases either to Mexico City or Guadalajara where facilities for straining are available. This accounts for the fact that most of the Republic's honey exports are reported from these two cities.

No official statistics have been compiled on the production of honey in Mexico. Apparently two factors influence production—weather conditions and price. During the past few years, the demand for honey in the United States has resulted in extremely good prices, and collections, therefore, have been more extensive than usual. Production in 1943 is estimated at from 10,000 to 15,000 metric tons.

Inventory Stocks of Cocoa Beans Decline

Inventory stocks of cocoa beans held in the continental United States as of January 1 were estimated by the War Food Administration to be 233,400,000 pounds, which amounts to about a 4½ months supply at the present rate of processing.

This inventory figure shows a decline of about 25 million pounds of cocoa beans during the last quarter of 1943.

PRESENT RESTRICTION

The present rate of processing is restricted by Food Distribution Order 25 to 80 per cent of the amount of cocoa beans processed in 1941, plus processings for quota-exempt agencies.

FUTURE UNCERTAIN

Future allocations of cocoa beans for processing will depend on the continued flow of supplies to this country from producing areas, WFA officials said. Availability of manpower, packaging materials and machinery also are expected to affect the total supply of cocoa and chocolate products.

Together...we have a stake in America

You are a manufacturer of cosmetics, perfumes and toiletries, visualizing in wide perspective the humming cities, thriving towns and fertile valleys of America as your market. You know that the continued favorable reception of your product depends above all on its intrinsic worth and appeal. Come war or peace, your high standards must remain fixed at the level of popular approval.

You among the many manufacturers whom we have served for years have found from the outset how well Florasynth *research* has interpreted your requirements . . . how well Florasynth *resources* aided in setting your standards . . . and how, under Florasynth *responsibility* — regardless of conditions — no effort was spared to maintain these standards.

You are our market directly . . . your market is ours, indirectly. Together, we have a stake in America!

More than 30 years of amazingly successful reproduction of ***Florasynthetics*** . . . JASMIN . . . BERGAMOT . . . LAVENDER *and others . . . Primary Essentials . . . Proved in Product Performance.*

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Tomorrow's Masterpieces

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Producing toiletries and cosmetics that meet highly critical demands, without many of the materials heretofore considered indispensable, is an accomplishment of which the industry may well be proud. But the value of this accomplishment is more than temporary. It has brought to light many new materials—"replacements" and "alternates"—which not only help meet present needs but also broaden the scope and increase the efficiency of compounding. These new materials, together with tried and proven standbys that will return with the end of the war, provide a broad and fertile background for the creation of tomorrow's masterpieces.

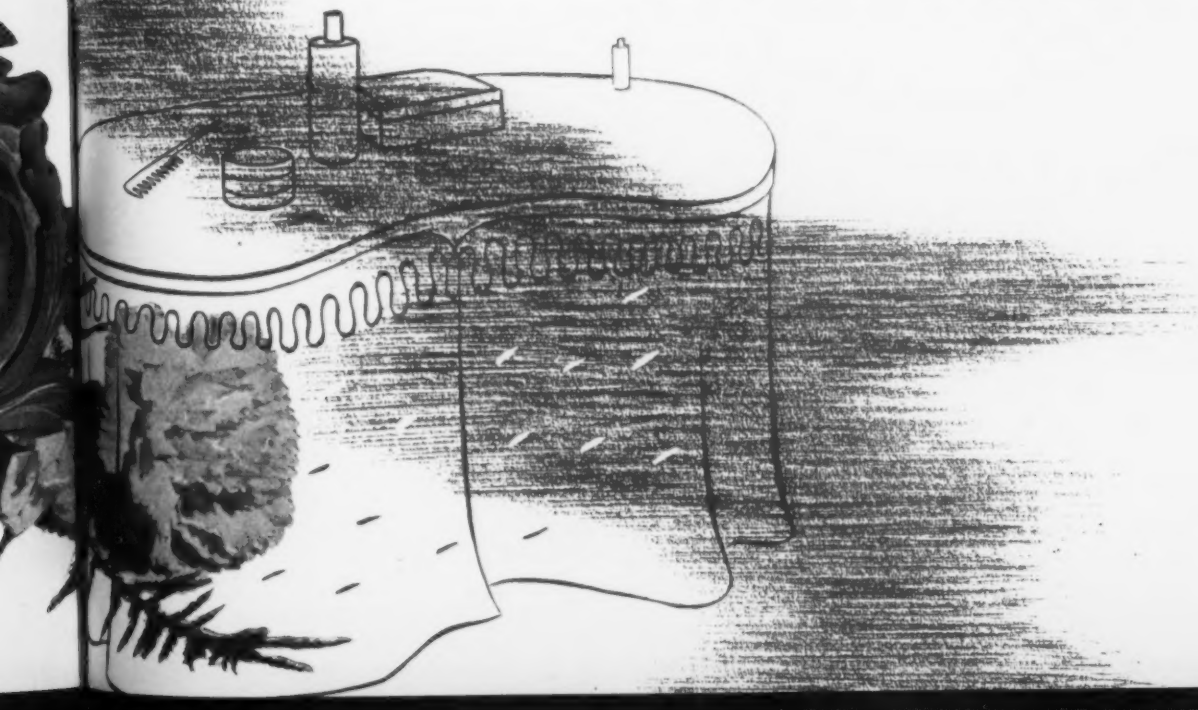
From Givaudan's research laboratories have come a good number of the new aromatic chemicals which are contributing to high quality and efficient, economical production. The experience gained in the development of these new chemicals can be of value to Givaudan customers in planning new products or improving old ones. We invite you to consult with our staff in giving reality to your post-war ideas.

BUY WISELY...BUY GIVAUDAN

Givaudan-Delawanna, Inc.

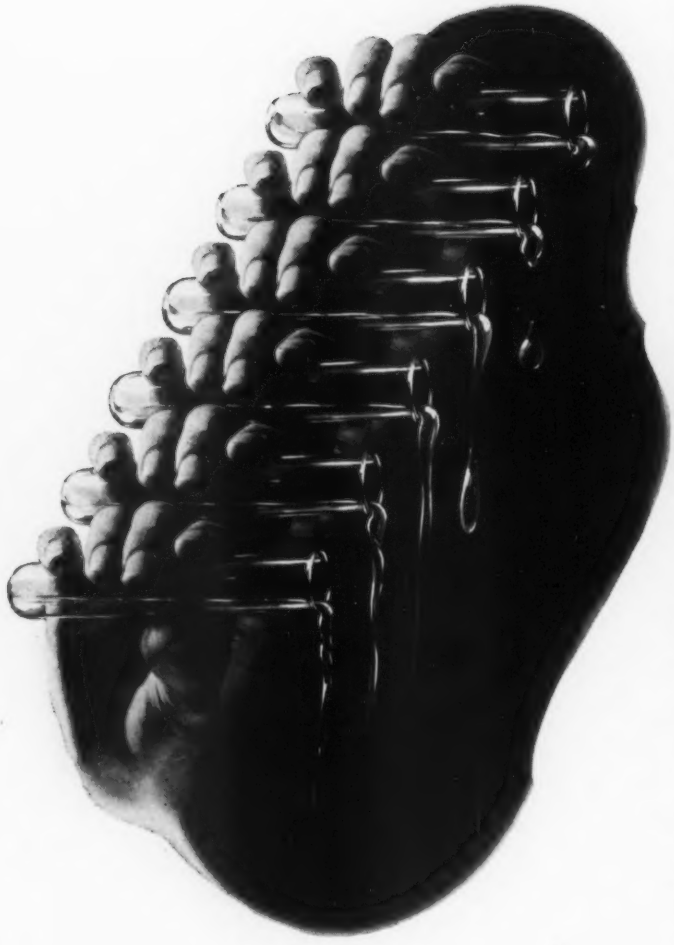
330 WEST 42nd STREET • NEW YORK 18, N. Y.

OUR PLANT FACILITIES ARE AVAILABLE FOR ANY FURTHER CONTRIBUTION WE MAY MAKE TO PRODUCTION OF MATERIALS FOR THE WAR EFFORT



WIDE RANGE FLOWABILITY

A VARIETY OF VISCOSITY TYPES TO FIT EVERY JOB



In the preparation of a product, you have undoubtedly often wished for a water soluble colloid available in several different viscosities. Perhaps you wanted a solution much thicker—or considerably thinner—in order to obtain the specific results desired.

To meet your most exacting needs, we have designed Methocel in a wide variety of viscosity types. Selection of the most suitable type is dependent, of course, on results required and manufacturing limitations. Only when the right viscosity is used are maximum economy and efficiency achieved.

This wide-range flowability greatly expands the additional usefulness of Methocel in your operations—and, at the same time, promotes efficiency of application.

METHOCEL

THE ECONOMICAL, WATER SOLUBLE THICKENER

Methocel is a valuable addition to many cosmetic products requiring a thickener, protective colloid or stabilizer. For thickening purposes, a specially designed Methocel viscosity type is available. High viscosities are, naturally, generally recommended.

In protective hand creams and similar products, Methocel has several important functions. Emulsified forms of the product use Methocel as an emulsion stabilizer. In addition, Methocel serves as a protective film upon drying since it is resistant to both oils and organic solvents. By using low viscosity types here, desired amounts of solids are deposited.

Before adopting a specific Methocel type, we urge you to refer your problems to the Technical Service and Development Division.

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METHOCEL

Among the many Dow Products serving the Cosmetic Industry are: Synthetic Aromatics, Dowicides, Propylene Glycol and Paradow.

Dow announces the opening of a Detroit office to serve this important industrial area

DOW

CHEMICALS INDISPENSABLE
TO INDUSTRY AND VICTORY

Books of the Industry to Aid You

DRYING & DEHYDRATION OF FOODS, *Harry W. vonLoesecke. Published by Reinhold Publishing Co., New York, N. Y. 302 pages, illustrated, 1943. Price $4.25.*

In his preface, the author says "the purpose of this book is an attempt to place before those interested in food dehydration a compilation of the latest practical information . . . without attempting an exhaustive treatment of the subject." In the foreword, R. S. Hollingshead, who wrote it, says, "the information presented is not intended as an operating manual, but only as a general outline of procedure and practices in commercial use." These ideas have been well carried out in the book.

The book contains 10 chapters describing such important subjects as types of dehydrators, dehydration of food products, plant sanitation, costs, nutritional value, packaging, storage, methods of analysis, reconstitution of dehydrated foods, patent list and a fine glossary of terms.

So often one gets a book on a subject only to find it to be an exhaustive dissertation on the scientific aspects entirely lacking in the study of the means of utilizing the knowledge. The present volume is quite different. Thus in a discussion of bananas, "this fruit is either sun-dried, spray or drum-dried. All the sun-dried fruit is prepared in the tropics. Spray and drum-dried fruit has limited use in that it is sold in the form of powders." Varieties used, description of spray and drum-drying, yields, cabinet drying and sun-drying are all described. Similarly for each other fruit, vegetable or food mentioned. Even the dry soup mixtures sold in grocery stores are mentioned.

Anyone wishing to know basic facts regarding the practical aspects of food dehydration will find this book to contain a wealth of information. The subject is well divided, clearly discussed and authoritative MGdeN

EMULSION TECHNOLOGY, A SYMPOSIUM. *Twenty Contributing Editors. 290 pages, illustrated, with index. Chemical Publishing Co., Inc., 1943. Price $5.00.*

This is a revision of an earlier edition known as "*Technical Aspects of Emulsions,*" now out of print. Three new sections have been added to the old edition; this constitutes the present volume.

The present book is more rounded in its study and uses of emulsions. One of the chapters includes a number of formulas for foods, drugs, cosmetics, beverages and polishes among others, totaling 22 formulas in all.

From this reviewer's point of view, one of the best chapters is the one written by R. M. K. Cobb dealing with the fundamental principles of practical emulsion manufacture. This writer displays a thorough knowledge of emulsions starting with scientific principles and going through their practical applications. A phrase such as "by forming a concentrated emulsion, diluting later, if desired, the emulsifier is used most efficiently" and "adding the electrolytes after the emulsion is completed is, in many cases, less apt to result in disaster; though it must be remembered that there is no such thing as precipitating a little bit of a colloid system. It is all or nothing," are examples of the writer's knowledge.

Clayton's chapter on "Emulsions in the Patent Literature" while not a complete study—nor is it claimed to be—is a good one. This emulsion expert again proves he knows what is going on in the world of emulsification.

A significant chapter, handed down from the earlier edition is the one dealing with emulsions for hypodermic injections. The implied future in this field is worth remembering.

While a large portion of the book deals with technical emulsions that are of no interest to food, drug or cosmetic manufacturers, the major portion is of direct application. It is better than the earlier edition in every respect. The additions make it still more desirable. It is a valuable addition to any library where emulsions are an important subject for study. M. G. deN.

Storage Pot with Lid

Storage Vessel for the Radioactive Treatment of Cosmetic Creams, etc. *U. S. Pat. 2,269,026,* Jan. 6. A pot for the treatment of different substances such as creams, pastes, pomades, ointments, natural or artificial clay, bath salts and the like, is provided with a lid, the pot and lid being provided on substantially their entire inner surface with an inner removable double wall. The inner wall comprises a projection closed at the top. This projection is arranged substantially in the middle, and extends over at least half the inner height of the pot, the inner wall limiting a space within which is housed a material capable of generating radioactive emanations. *(C. A. 36)*

Profit Ceiling

Congressional and business circles have scanned an exchange of correspondence between Rep. Lyle H. Boren and Economic Stabilizer Fred Vinson for a sign of the role that the controversial "2 per cent profit ceiling" will play in the pricing of consumer goods during the reconversion period.

Rep. Boren released Mr. Vinson's answers to a series of six questions on the "2 per cent ceiling" with a comment that the reply "did not explain many questions business is asking."

The original "2 per cent order" was issued last November, directing WPB and OPA to set up programs for the production of low-price essential consumer goods, which would allow manufacturers a maximum of 2 per cent profit on their operations.

In his letter to Congressman Boren, Judge Vinson insisted that his directive was intended to assure manufacturers against production at a loss.

Better Export Market

Europe, not Latin America, will be the big export market of the United States after the war, according to Rolf von Heidenstam, chairman of the Swedish Trade Mission.

The value of the postwar market in Latin America is being exaggerated, he declared, adding, "I have been there, and from what I have seen I think you are being a bit over-optimistic. If we have a big foreign trade market it must be in Europe and in Russia."

Although the picture is a bit uncertain in Russia at present, Mr. Heidenstam predicted an evolution for that country. Russia will have substantial mass production, he added, but will not have such large export possibilities as the United States.

Skin Cleanser

Foaming Products. *Fr. Pat. 853,578.* A foaming product for cleaning the skin is obtained by adding to solutions of neutralized fatty acid derivatives of sulfonated, aliphatic, aromatic or hydro-aromatic acid containing an oxy or amino group, such as isothionic acid or taurine, neutralized fats or acids of a high sulfonation degree.

Sunburn Preventative

Composition for Preventing Sunburn. *U. S. Pat. 2,267,200.* A vehicle such as petrolatum has incorporated in it a small proportion (suitable amount about 0.25 to 2 per cent) of a resin derived from petroleum and capable of absorbing light of wave lengths normally tending to produce sunburn.

has an enviable reputation, having made a marked contribution to the success of so many perfumes, colognes and toiletries which contain alcohol.

It really removes the sharpness of alcohol odor and lets the fragrance come through.

If you aren't already using it, write us for a sample of Tonkaire and directions for use. You'll really be amazed at the results!

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What About Peppermint?

The final figures on the 1943 American peppermint oil crop released by the Bureau of Agricultural Economics of the Department of Agriculture disclosed a disheartening drop in production from even the fall estimates, which were bad enough. The bad news is:

Production

	Pounds	
	1943	1942
Indiana	286,000	595,000
Michigan	234,000	522,000
Ohio	4,000	6,000
California	25,000	31,000
Oregon	122,000	162,000
Washington	144,000	119,000
Totals	815,000	1,435,000

Acreage

	Acres	
	1943	1942
Indiana	15,900	17,500
Michigan	13,000	17,400
Ohio	120	130
California	690	765
Oregon	3,500	3,600
Washington	3,500	2,700
Totals	36,710	42,095

Yield

	Pounds	
	1943	1942
Indiana	18	34
Michigan	18	30
Ohio	37	46
California	36	40.5
Oregon	35	45
Washington	41	44

STATE TRENDS

Of six states reporting to the Bureau, only Indiana exceeded the September estimate by producing 26,000 lbs. more than had been expected. But Michigan produced 62,000 lbs. less; Ohio just met the estimate; while California, Oregon and Washington failed to realize their expectancies by 7,000, 11,000 and 10,000 lbs. respectively.

BRITAIN

Britain has asked for peppermint oil through Lend-Lease, in spite of her own production of the oil. More and more is being demanded for menthol manufacturers as the few remaining stocks of Japanese menthol have become used up.—*Food Materials.*

Technical Abstracts

Flavored Foods, *U. S. Pat. 2,305,620.*—To insure a satisfactory flavor in various foods and beverages when prepared for use, as from packaged pudding powders, marketed through the grocery trade, flavor developing substances are added to the product as manufactured which are stable during the expected shelf-life or period of keeping of the product before use, but, when the product is prepared for use, they undergo chemical alteration with resultant development of a desired flavor. Among flavor developing substances which may be thus used are: benzaldi (ethyl carbamate), m. 181-2 deg; ethanaldi ethyl carbamate), m. 125 deg.; isopentanaldiethyl (ethyl carbamate), m. 129 deg.; heptanaldi (ethyl carbamate), m. 116-17 deg.; octanaldi (ethyl carbamate), m. 114.0-14.5 deg.; nonanaldi (ethyl carbamate), m. 109.0-9.5 deg.; decanaldi (ethyl carbamate), m. 111.5-12.5 deg.; dodecanaldi (ethyl carbamate), m. 108.0-8.5 deg.; furfuraldi (ethyl carbamate), m. 166-7 deg.; benzaldi (butyl carbamate), m. 126.5-80 deg.; benzaldiureide, benzaldi (methyluriede), m. 180-1 deg.; ethanol-, m. 173-5 deg.; nonanal-, m. 185-90 deg.; and decalaluveide, m. 190-200 deg.; diacetyl thioureide, m. 118-9, deg.; diacetyldi (ethanolamine), m. 121-3 deg.; acetyl-methyl-carbinol-ethanolamine.

Obtaining Essential Oil from the Peel of Citrus Fruits, 1940, No. 8, 84-91, *Khim. Referat, Zhur,* **4,** *No. 1, 145, 1941.*—Essential oil from the peel of citrus fruits.—Essential oil of good grade is obtained by distillation of mandarin peel under a pressure of 100-150 mm. The process is accelerated by using small pieces of the rind. The yield of the oil is increased by 20 per cent on keeping the peel in ethylene and by 29 per cent on keeping the whole fruits in ethylene. The content of oil in the rind does not change on keeping the rind in the frozen state for five days. (*C.A.* **37,** *2135, 1943.*)

LEMON OIL UNAVAILABLE

War Food Administration suggests it will be wise to prepare for almost no supply of lemon oil. Thus far the hazy reports from California indicate a sharp cut in production. The government apparently needs more than the potential supply. Only the Almighty and a half dozen people in WFA and in AMG in Italy know what we may hope from Sicily. Apparently none of the sources indicated are telling. With government needs approximately around 700,000 pounds and perhaps more, and with only 800,000 in sight, it is easy to understand why we are warned to prepare to get none. Over in Commerce Department and in WFA, Lester Barber and John Greene, who understand the field of flavors as well as perfumes, soaps, beverages, candies and bakers' needs, point out that government might take heed in its flavor needs by taking a hint from the jello producers. They use increased quantities of orange oil—which is abundant—and lime, raspberry, strawberry, cherry, and other fruit flavors, and find they have created a great popularity for these products. It is suggested the science of synthesizing food products has developed so well that the properties supposed to be inherent in lemon oil can easily be supplied with other flavor oils in full compliance with the rigid requirements of the Food and Drug Act. Overseas use of lemon oil apparently is not based upon any indispensable need, but springs from the laudable purpose of giving them Over There what their representatives Over Here say they must have. Under the existing circumstance of extreme scarcity the proposition is that part of the lemon oil products for overseas shall be replaced by other flavors. The final determination largely lies in the decisions by Army and by A. L. Kalish of the WFA Essential Oils Section.

SPICE SUPPLY INCREASES

WFA reports the overall spice supply has increased 22 per cent. Allspice and cloves have been withdrawn from quotas, and the supplies of cinnamon and ginger are reported abundant. Office of Food Distribution in WFA, headed by Lee Marshall, is undergoing a process of streamlining. There are rumors that some units, such as spices and essential oils, may be consolidated. But they are only rumors without any authoritative substance. Another rumor has it that A. L. Kalish may be transferred to the new procurement division which is being established. No apparent basis for the rumor has yet appeared, however.

Lilac fragrance captured at its crest
Sweet Lilac "Schimmel & Co."

SCHIMMEL & CO., INC.

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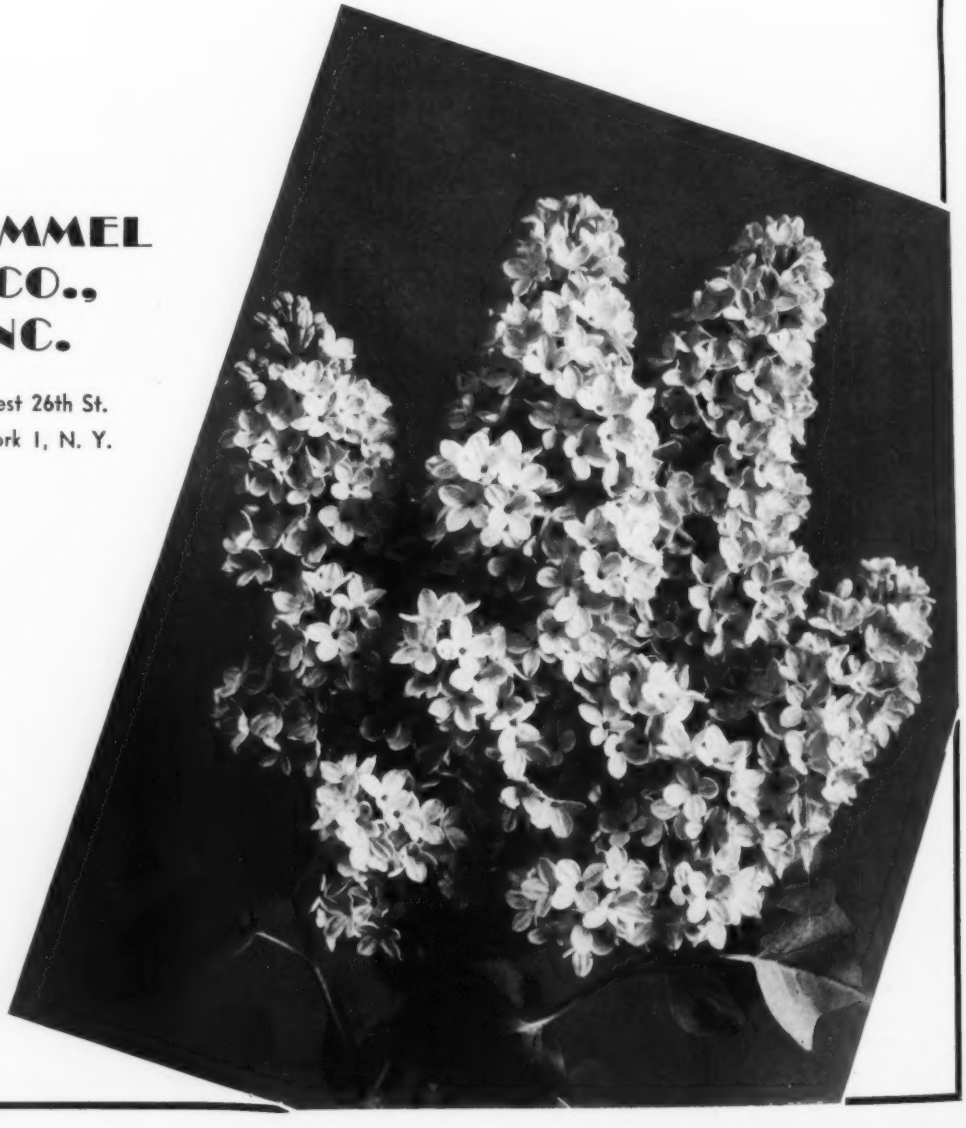
New York 1, N. Y.



Soap

Rosin—Product of the Southern Pines

For over 60 years the amber gum of the pine tree, rosin, has traveled from forest to soap kettle. Today, factory-production schedules include many brands of rosin soap

THE HUNDREDS of drums and bags labeled "rosin" that are stored in the plant yard are a familiar sight to almost everyone working in a soap factory. Rosin is no stranger among us as it travels its course through the factory, but to many people, just what this almost transparent amber-colored material is, where it comes from and why it is used in the soap industry is no doubt somewhat of a mystery.

NAVAL STORES

To the world of commerce rosin, along with various other pine tree products, is known as a naval store. The term, naval store, dates back to the days of wooden ships when crude rosin was used in caulking the seams of the boats to make them watertight. It was also used to treat the ship's ropes, and even to plait the hair of the "Jolly Jack Tars."

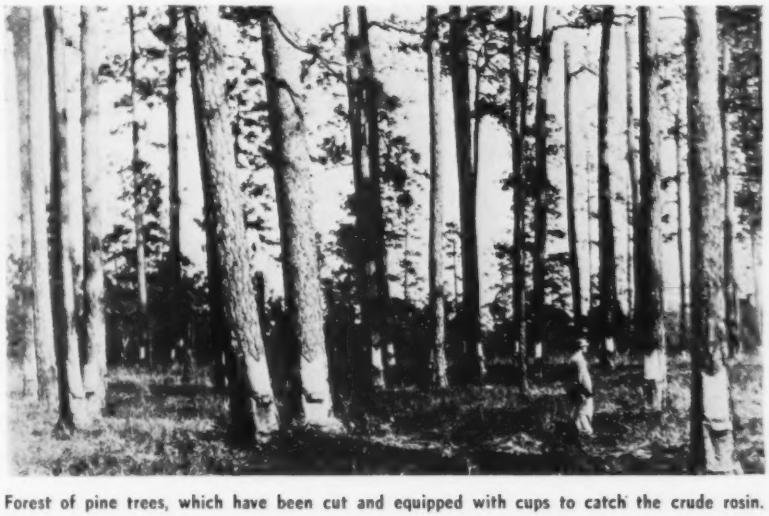
EXPANDING USE OF ROSIN

So for centuries the gummy liquid that flowed from the pine tree was considered a top essential to the shipbuilding industry. Every pound produced was allocated exclusively for naval use. It was because of this close association with the sea that rosin, pitch, turpentine and other products made from this pine gum were called naval stores. Now that the day of the wooden sailing vessel has passed the large quantities of rosin formerly used for shipbuilding are finding their place, through chemical research, in hundreds of products used on land, on the sea and in the air.

Today naval-stores production is one of the important industries of the South. Operating almost entirely in that section of the South which extends from North Carolina to the Gulf of Mexico and as far west as Texas, it produces over one-half of the world's supply of naval stores.

CRUDE GUM PRODUCTION

Eye-catching attraction for visitors to the southern pine-forested states is the thousands of white-faced trees, each with its small bucket attached to the trunk. This is nature's factory producing crude pine gum. Periodically during the months from April to October the inner bark of the trees is cut with a special axe in the shape of the letter "V." About 32 of these cuts are made in the bark during the flowing season, and from these cuts the crude rosin oozes down into the metal or clay bucket attached to the tree. Most cups hold about three pints and they fill about once a month. The cups are then emptied into buckets which are later emptied into barrels. Wagons drawn by pairs of mules wend their way through the forest collecting and hauling the barrels of crude gum rosin to the distillery or "still" where the turpentine, rosin and other products are recovered.



Forest of pine trees, which have been cut and equipped with cups to catch the crude rosin.

Woodland Muguet

A breath of spring—our Woodland Muguet—its soft, light scent heightened by the fragrance of a wooded background. One of the loveliest in our series of artistic creations for your perfumes, soaps and cosmetics. We will be glad to send you samples for your own products.

AROMATIC PRODUCTS, INC.

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EXTRACTION PROCESS

The process of extracting the turpentine and rosin from the crude gum is comparatively simple. Large copper stills, partly enclosed by brickwork and heated directly by wood fire, are the important units in the production of turpentine and gum rosin. The barrels of crude gum are emptied into the heated stills. Water is added and the vapors given off by this combination are condensed into large tanks by means of water-cooled coils. This condensed liquid contains turpentine and water. The water is removed and the pure turpentine is pumped into storage tanks ready for shipment.

After the turpentine and water has been boiled off the still contains liquid rosin. This is pumped through a series of strainers and layers of cotton batting to produce the desired grade of rosin. The finished rosin, still in a molten state, is poured into packages—wooden barrels, metal drums or paper bags—to cool and harden, ready to take its place in hundreds of commercial products.

COMMERCIAL TYPES OF ROSIN

On the market and in manufacturing specifications this type of rosin, made from the crude gum of the live pine tree, is known as gum rosin. The other important commercial type of rosin is wood rosin. This wood type is extracted from the rotted stumps and branches of the pine tree by steam, solvents and hot ovens. For most uses gum and wood rosin are interchangeable. Both are graded alike and specified by the same 13 standard colors which vary from water white to a dark brown.

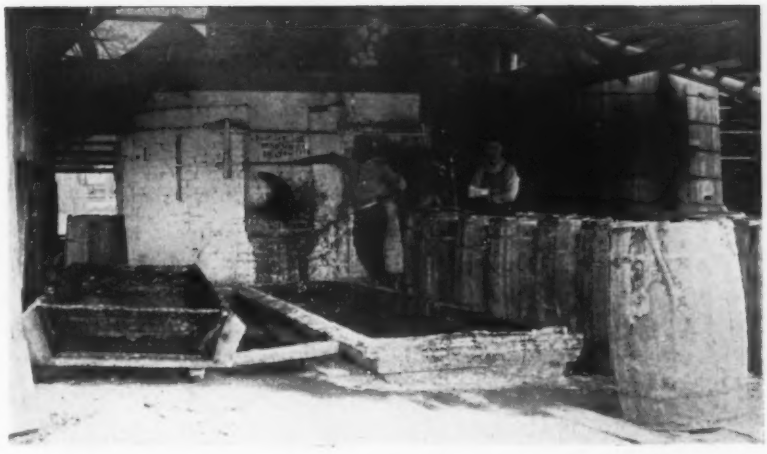
Modern industrial research has found such a multitude of uses for the various grades of rosin that the naval-stores industry no longer depends upon the shipbuilders' activity. Rosin has a permanent place in a wide variety of products, all the way from munitions to violin bows. In sizing for paper, paperboard and wallboard, sealing waxes, adhesives, matches, waterproofing compounds, plastic wood, disinfectants and even to remove hog bristles, just to name a few more of its many uses, rosin has an active role.

USE OF ROSIN IN SOAP

At Procter & Gamble factories rows on rows of rosin barrels in the backyard have practically established themselves as a factory landmark. So far as the records go, the use of rosin in soap appears to date back to the 1860's. It was during this period that some homemade and commercially-produced rosin soap appeared in the rosin-rich South. It was probably the easy-rubbing qualities imparted by rosin which made this type of soap grow steadily in public demand, and in turn draw company attention to its manufacture. During the 1880's a Procter & Gamble soap known as "Town Talk" gained a considerable popularity as a rosin soap. Ever since that time rosin soaps have had an important place in our production scheme. And currently the U. S. Government is sponsoring the partial replacement of regular fats by rosin.

Today, factory-production schedules normally include about a half-dozen different brands of soap containing rosin. Over the years, careful experiment and extensive research have guided the factory operations that process this pine-forest product and combine its desirable qualities with other soap-making ingredients to make a distinctive type of soap which still enjoys wide popularity after three generations of home use.

—*Moonbeams*, Oct. 1943.



A fire still, in which the turpentine and rosin are extracted from barrels of crude gum.

Soap Uses in War Industries

The preserving and renovating properties of soap have never been so important as today when it is necessary to make things last as long as possible. Leather is one of those items that are none too plentiful and the best that is available goes to the armed forces. But the Army is conserving its leather, too.

From all the fighting fronts, from Italy to Australia, old shoes are collected and sent to two Army shoe rebuilding plants, one in Hannibal, Missouri, and the other in Buford, Georgia. Here the shoes are inspected, sorted and graded and put through a renovating process, the first step of which involves the use of soap. The sorted shoes are sent to washing tanks where they are dipped and whirled in a soap solution for five minutes and then rinsed for two minutes. Following this comes a thorough sterilization and a mildew-proofing treatment. After this preparatory procedure, the shoes go through mechanical procedures during which the worn out parts are replaced or repaired and the shoes completely renovated, ready for use again.

NEW SOUND INSULATING PLASTER

War-time building, which is restricted chiefly to plants needed in a hurry for the production of war materials, puts a unique premium on speed. One of the agents employed to increase working efficiency and cut down construction time is soap; and one of the more recent building uses of soap is in making materials for sound insulating walls, ceilings or other surfaces. A unique feature of the patented method (U. S. 2,301,986) is that the insulated material itself is available as a dry fibrous mass, rather than as preformed boards. This mass is to be combined with water for producing a plaster for absorbing and deadening sounds. This obviously lends itself to greatly facilitated application to surfaces to be insulated and reduces the labor and time.

PROTECTIVE COATING FOR FRUITS

An interesting use of soap in connection with the conservation of our nation's food supply is evidenced in a recent patent (U. S. 2,332,128) which suggests a method for preventing the formation of insoluble soaps on the fruits in areas where only hard water is available. This improvement consists of dissolving sufficient sodium hexametaphosphate in the soap-containing emulsion of waxy material to prevent the precipitation of insoluble soaps when protectively treating fresh fruit.

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Spike Lavender Oil

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New Trend Starts in Hair Waving

At a recent dinner party given for the press by the Martin Laboratories a new use for an old compound was under discussion.

Thioglycolic Acid is an old timer in chemistry. Its method of manufacture has been known since the turn of the century, but it is only recently that it has found application in the beauty field, where it promises to be somewhat of a bombshell in cold permanent waving, and as the active ingredient in depilatories.

The method of manufacture is rather delicate and requires experience to avoid discoloration and odor, but with proper care a comparatively odorless and colorless liquid may be obtained. The acid is used for cosmetic purposes as a salt, either combined with sodium, ammonium, calcium or monoethanolamine.

It is this latter salt which is used in cold permanent waving. Upon application a reaction takes place with the keratin contained in the hair, provided proper pH conditions have been established. This reaction has the effect of softening the hair shaft so that it may be curled around wooden spools, or other suitable forms, and leave the hair fixed in the desired shape.

The calcium salt is used in depilatories. Here the reaction is allowed to progress so far that the hair may be completely removed.

Cleansing Properties of Soap

The role played by soap in the washing process is the subject of several theories, all of them based on the presumption that soap decomposes into fatty acids and alkalies upon solution. For the rest, however, the different theories vary considerably. One of the most important views is that of Knapp[1] who bases soap's efficiency on the wetting properties of the soap solution in regard to all types of materials, as the removal of dirt presupposes the closest possible contact between the substances to be removed and the dissolving medium. Other properties have been set forth by Heemann[2] as being the condition of effective cleansing faculty: first, wetting ability; second, lathering and emulsification properties, making possible the dispersion of dirt and fats into the smallest possible particles; third, adsorptive power which means that the emulsified particles of dirt are adsorbed and brought to the surface of the material to be cleansed and then, being merged with the soap solution, will be completely removed during subsequent rinsing.

The lathering capacity of soap is primarily dependent upon the type of oils and fats used, but is secondarily also influenced by the alkalies used. A higher content of stearin and coconut oil is particularly favorable. To increase the lathering faculty, basic fat mixtures containing a large percentage of palm kernel oil and certain hardened fats have been recommended, to which might possibly be added sulfonic acids. Additions of certain wetting agents such as cimol with fatty alcohol sulfonates, acetyl ricinoleic sulfonic acid sodium or lauryl sulfonic acid sodium, and also tragacanth, gum Arabic, spermaceti, turpentine, etc., have been tested with varying results. Additions of alkaline salts such as soda, phosphate, and sodium silicate will increase the cleansing efficiency of soap which is primarily dependent upon the pH value. It is, for instance, assumed that a soap solution of .25 percent should show at 20 deg. C. a pH of maximum 10.7, which is still harmless to the skin. The fear with which free alkali was formerly viewed is not equally shared in modern practice and, for instance, English standards for Government purchases allowed during normal times a content of .13 per cent free alkali, while the Swiss food regulations permitted a maximum of .1 per cent. Several recently developed preparations which incorporate sulfonic acids instead of fatty acids are also present in the form of their alkali salts. They do not, however, contain free alkali and show a neutral reaction therefore, even in watery solutions. It will be clear that, while such preparations might be assumed to be free from alkali, they are not actually so. Truly free from alkali would be such soaps as those in which the fatty acids are combined with triethanolamine in place of alkali or soda, but these types of soaps have evidently not yet attained particular importance.

[1] D. Pf. Zg. 24, 38, 108.
[2] Ibid.

Cutaneous Detergents

Cutaneous Detergents. C. Guy Lane and Irvin H. Blank. *J. Am. Med. Assoc. 118, 804-17 (1942).* An extensive review with 85 references. *(C. A. 36)*

Glycerin Substitutes in Toothpaste

Suitable substitutes for glycerin are first of all materials which are chemically related to glycerin, such as glycol and its derivatives. Diethylene glycol monethyl ether (Carbitol) may be mentioned as an example, 2 to 15 per cent of which has been used satisfactorily in creams. As a matter of fact, it is also used abroad in the manufacture of toothpastes.

GLUCOSE

A very good glycerin substitute for use in toothpowders, incidentally, is silica gel, which is believed to be very beneficial to the gums. To prevent the drying out and hardening of toothpastes, glucose is about equally as effective as glycerin, showing even more pronounced hygroscopic properties. It is somewhat more viscous than glycerin and is quite inexpensive. A suitable preparation, for instance, is a mixture as follows:

Magnesium carbonate	5
Calcium carbonate	45
A solution of starch in Water	18 38

to which preparation additional ingredients may be added, including essential oils.

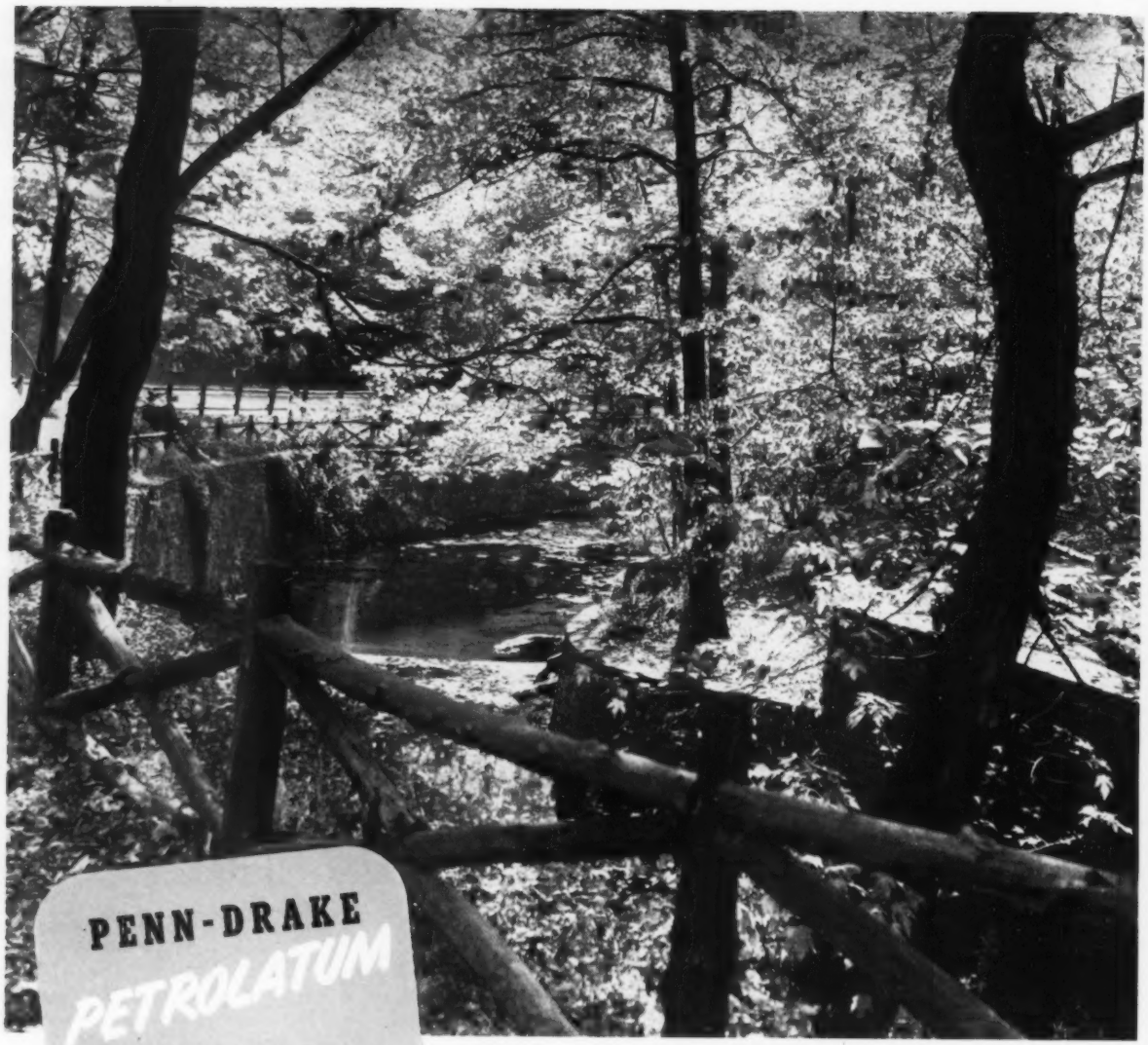
CURACIT SODA

Free cholic acid .5, together with triethanolamine 1.5, and a little water is a type of combination showing great emollient and penetrative properties, which are of particular importance in shaving creams. Preparations of this type are offered to the trade under the names Curacit Soda and Curacit Triethanolamine, both of which may be considered satisfactory substitutes for glycerin.

OTHER SUBSTITUTES

Other combinations which also offer very interesting possibilities as glycerin substitutes and which also excel because of their emollient properties, their penetration and hygroscopic quality, are concentrated solutions of calcium lactate and sodium lactate, as have been known in Europe under the names Perka-glycerin and Per-glycerin. These combinations, however, may irritate the skin if used in too large a proportion. Not more than 3 per cent should be added to soap and even less to creams.

Finally, butyl stearate might be mentioned, which also has a place as glycerin substitute.



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for medicinal uses
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by ARNOLD KRUCKMAN

MAN-POWER PROBLEMS

Industries not directly connected with making war, or keeping the people fit, will lose workers rapidly the next few months. Tool makers and highly skilled technicians in war plants are being ruthlessly inducted. The old claim of morale-building for civilian industries therefore obviously will have little effect until the pressing need for fighting men and for workers in war plants has been filled. There is practically no chance of deferment for unmarried or married men between 18 and 29 whose number is up. They will go to war. Those in 4F from 18 to 45, or even beyond, are apt to be called for direct war jobs. What may come out of the present tangled and confused debate about new laws to create labor battalions, or to force men into the Army for the purpose of compelling them to take war jobs, is not yet clear. Anything may happen. Naturally, much depends upon how the war goes. A labor draft law still is remote. The Unions are against it, and the great voiceless majority are against it, and Congress is against it because Congress must stand for re-election.

There is more possibility that 4F's may be drafted for war work. Bear in mind the word is "possibility." The armed services, now all-powerful, logically are for it. But the Costello subcommittee of the House Military Affairs Committee talks about a law, yet probably would like to avoid making a law. They hope, and probably vainly hope, that the threat will drive 4F's into the jobs where they are wanted. They are chiefly after the thousands in 4F between 18 and 26. Their transfer from whatever they are doing now to war jobs will ease the impact of the withdrawal of the men who are being taken into the armed forces. The 4F's from 26 to 38 are not immune, but will not be taken as swiftly as the first category. Those from 38 to 45 still will be least disturbed, other things being equal.

Trouble still seems to be that some war industries and some areas are hoarding men; and we hear that there are workless people in several areas. Also that the million discharged from the services either have not been able to get jobs in war industries, or do not wish to work in war industries. Part of the present trouble is to induce men in areas where work is slack to go to areas where there is too much work. USES has tried to persuade people to move from their present locations to other places. Over 300,000 are needed in the region that focuses on Washington, D. C. The neighborhood immediately around the Capital is jammed. But so far, USES apparently has not been able to induce them to go to West Virginia, to North Carolina, and to other relatively nearby places where plants want help. Part of the problem McNutt and his associates have to solve is how to urge them to move voluntarily from congested areas to areas where they are needed. Direct compulsion is regarded as dynamite. The effort seems to be to camouflage the compulsion under the colors of other compulsions.

POPULATION SHIFT

Naturally, communities, cities, and states, are not happy about losing population. The shift already evident is important to every merchandiser in the United States. Examination of the most recent census studies reveals huge segments of population have moved. Apparently the trend is decidedly westward. Census says we have had a net over-all loss in population of 4,021,220 persons between April 1, 1940, and November 1, 1943. Roughly, 36 States and 2,620 Counties have lost a gross of 7,000,000 population, while 12 States have gained approximately 3,000,000, and 469 Counties have increased by 4,857,885 persons. The difference between the State and the Counties' figures is due to the fact that there have been extraordinary intra-state shifts in some places. Approximately half of the 3,000,000 who have shifted from State to State have gone West—west of the Rockies. California alone has gained between 700,000 and 800,000 population. Oregon has increased by almost 100,000; Washington by approximately 175,000; Nevada, 75,000; Utah, 60,000; and Arizona by 125,000. These rough figures are seriously arresting to those who do nation-wide business when you learn population in all intervening States, eastward, has decreased, until you come to Michigan, on the Great Lakes; in Michigan the increase has only been 75,000. From Michigan eastward there has been a decrease in population until you reach Florida, which has gained 250,000. And then as you go up the Atlantic seaboard Delaware has increased by 7,000; the District of Columbia by 200,000; Maryland, 250,000; Virginia, 200,000; Connecticut, 75,000. The States which have lost population are Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, New York, Pennsylvania, West Virginia, New Jersey, Kentucky, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia, North Dakota, South Dakota, Nebraska, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Indiana, Ohio, Louisiana, Arkansas, Texas, Oklahoma, New Mexico, Kansas, Colorado, Montana, Idaho, Wyoming. The most outstanding decrease has occurred in New York, between 800,000 and 1,000,000; Massachusetts, 225,000; Pennsylvania, 550,000; West Virginia, 200,000; Kentucky, 300,000; North Carolina, 150,000; Mississippi, 175,000; North Dakota, 125,000; Nebraska, 150,000; Minnesota, 275,000; Iowa, 250,000; Missouri, 225,000; Wisconsin, 200,000; Illinois, 300,000; Oklahoma, 275,000; Arkan-

Short of Help?

Here's one good way to hold those you still have!

(to say nothing of doing your duty to your country)

Just organize *all* your employees as active War Bond and Stamp sales solicitors! Put your *whole* establishment in the War Bond effort!

You'll be astonished at the results. Astonished—and gratified!

Once "Betty, the Bond Seller" comes to realize that she's just as vital a part of the war effort as Rosie, the Riveter—*or even more so*—that restless urge to "do something for the war" will fade away. And Betty will regard her present job in an entirely new light.

Don't take our word for it! Check up against the experience of a national 5¢-10¢ chain which, through its hundreds of outlets, sold a total of $53,464,389 in War Bonds and Stamps in 1943.

This chain reports that—entirely aside from doing its duty to our country—it has gained immeasurably in the regard of its employees, and of the communities it serves. Both of these have become convinced that this concern is wholeheartedly playing an important part in the war effort. And employee morale has been sharply increased through the pride and satisfaction its workers take in their War Bond work.

So why not put in effect at once this simple means by which you can help yourself, help your employees, and help your country?

War Bonds To Have And To Hold!

HOW MANY BONDS ARE YOU SELLING?

If your bond sales approach, or exceed, 250 pieces a month, and you are not already an Issuing Agent for United States War Bonds, we suggest that you discuss this matter with your Federal Reserve Bank. If your bond sales are running at a lower figure, your own bank of deposit can probably arrange to have you appointed as a sub-issuing agent.

LET'S ALL BACK THE ATTACK
WITH WAR BONDS!

The Treasury Department acknowledges with appreciation the publication of this message

THE AMERICAN PERFUMER
AND ESSENTIAL OIL REVIEW

This is an official U. S. Treasury advertisement—prepared under auspices of Treasury Department and War Advertising Council

sas, 150,000. These figures are approximate, but substantially accurate. A detailed county by county study has been made from Census figures by War Food Administration, Food Distribution Office, and may be had by writing for "Highlights of Population Shifts" to Office of Distribution, War Food Administration, Washington 25, D. C.

PEPPERMINT OIL CEILING

Peppermint, associated with the name of Kalish by reason of the allocation Order he formulated, was finally placed under a price ceiling by OPA effective April 1. Producers' prices were hiked from $5.50 to $7.00; dealers' prices were fixed at $7.50; and dealers' sales of U. S. P. redistilled oil of peppermint was increased from $6.35 to $8.05 per pound. The same OPA maximum price order fixed $3.50 as the ceiling for producers of a pound of spearmint oil; $4.00 per pound as the ceiling for dealers selling spearmint oil. Dealers are permitted to add to the maximum prices for the basic grade of U. S. P. redistilled peppermint oil established by the regulation the dollars-and-cents differentials per pound they had on July 1, 1943, for premium grades of U. S. P. redistilled peppermint oil. Producers, or growers, who also are dealers, may sell their own products only as producers; if they handle other producers' peppermint oil they may sell only the oil they handle for other producers at the dealers' level. The seller who acts as a broker is permitted to add not more than 10¢ to his price. OPA explained in its release that the price ceiling was fixed to encourage the grower to produce peppermint for war purposes, and to make easier the operation of the peppermint oil allocation program.

The ceiling placed on the price for dealers naturally is disappointing. When peppermint oil sold at $2.75 per pound the mark-up was only 50¢. The cost of marketing the oil from the dealers' level has increased sharply. Commissions are higher, other fixed charges are higher. It seems extremely doubtful, from the Washington point of view outside of OPA, whether or not the dealer can make any profit at this ceiling. The method of arriving at the mark-up for the dealer is the system for which OPA is under most widespread attack. In arriving at a dealers' price ceiling OPA does not attempt to give the dealer an opportunity to make even the same profit he would earn normally; its chief purpose seems to be to enable him to meet at least some of the increased cost. The fixed mark-up, based on a year when expenses were far less, is the principle which is used throughout OPA calculations by its unrealistic academic or legalistic economists.

The argument you hear in OPA is that the dealer gets the same amount of money for the same number of pounds. The fact that he makes only two per cent profit, as compared to a more adequate profit in the base period, does not move OPA an iota. OPA maintains it is solely engaged in holding the stabilization line. Obviously also it is practicing socialization by spreading the profits. Its system of economics cannot otherwise be reconciled to any existing philosophy.

OPA REQUIRES FINANCIAL DATA

Meanwhile the industry, like other industries, has been asked to supply financial data for OPA. This data, detailed and very exhaustive, will make a clear picture of the fiscal structure and the operations of each unit of the industry. It will enable OPA to understand the business of a firm as well as any officer of the firm is able to understand the details. A report is required annually, at the end of each fiscal year; and another report must be filed every three months. The latter apparently is to supply current history, much as similar history is given every quarter to the Stock Exchange by its members. These reports will enable OPA to appraise the health of an institution currently, and to judge its place in the postwar picture, and to determine whether or not its relation to Labor is properly balanced. It is clear that every precaution is being taken to maintain every economic and social aspect of the stabilization program. OPA has a considerable expert organization to administer this phase of its business. It is not unlikely that in time the Internal Revenue people will seek information from OPA.

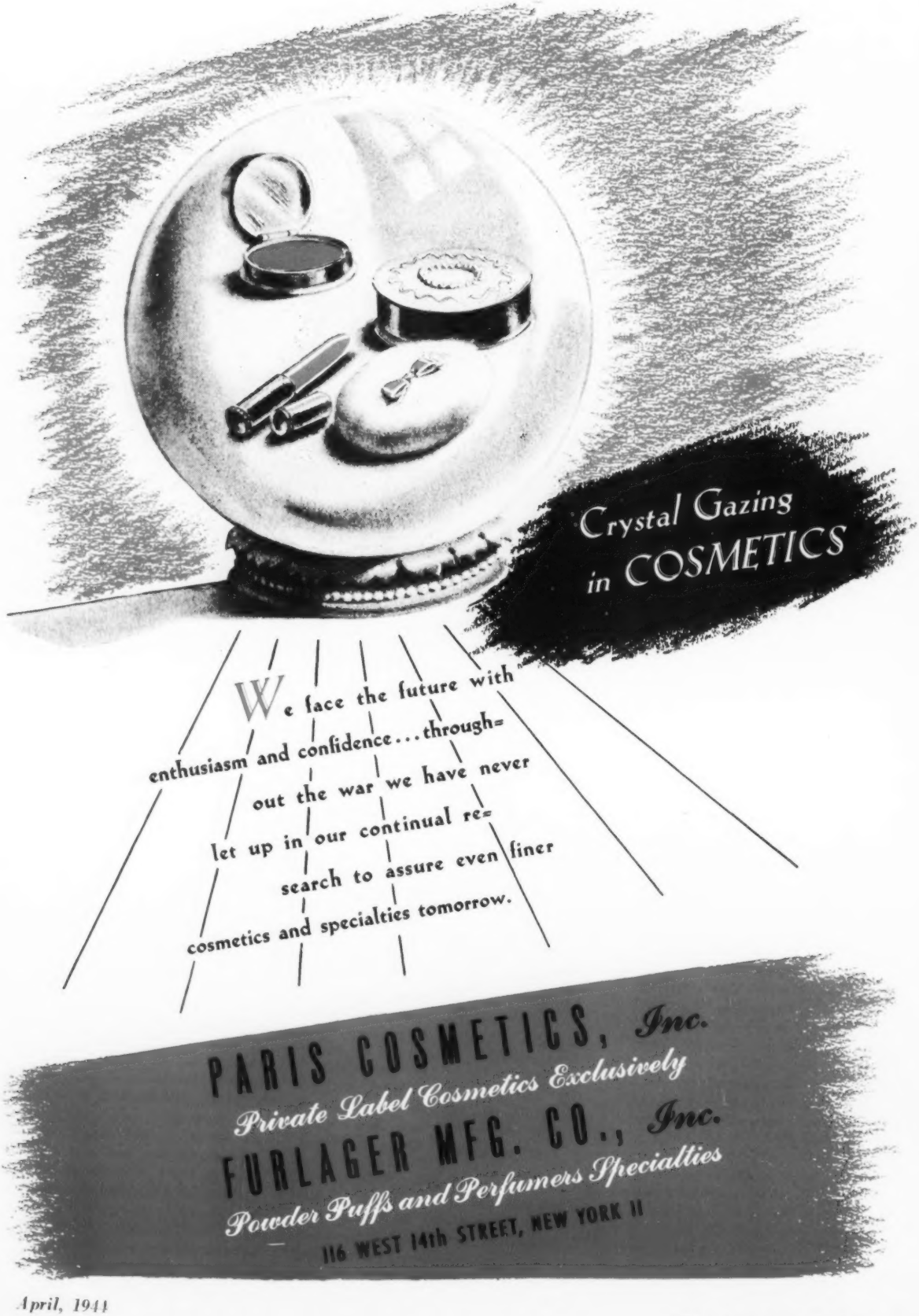
The WPB Dentifrice Industry Advisory Committee met in Washington on April 4, and the WPB Toiletries and Cosmetic Industry Advisory Committee met on April 12. Neither Committee has met for the better part of a year. This will be the first series of Industry Advisory Committee meetings over which Elmer B. Tysdal will preside as Chief, Cosmetics Unit of the WPB Chemicals Bureau. There are few persons in America with such an amazing and detailed knowledge of the whole gamut of the toiletries, cosmetics, and flavoring and aromatic products business, with all its trimmings. The startling quality of Elmer Tysdal is that he not only knows the facts, but he has oriented his knowledge with balance and realism and historic proportion. He has an encyclopedic memory and an administrative faculty with executive initiative. They drew a rare prize when former Chief of the Unit, C. A. Willard, induced Tysdal to become his assistant.

Elmer B. Tysdal

One of the major problems Tysdal will discuss with his Industry Advisory Committees will be containers. The situation is hourly growing worse. Paper is the most pressing need. WPB announced that a total of 4,335,353 tons of paper and paperboard will be manufactured during April, May and June, for ALL purposes, which means war, near-war, and purely civilian. Half of it will be paper, and the other half paperboard. Containers have been allocated 1,110,498 short tons; folding boxes, 507,555; set-up boxes, 189,555. Over 60 per cent goes into containers that go overseas. Non-war civilian needs logically will get the least, and the least this time means less than it usually means. The situation is so bad that they are working on a plan to place all lumber under a sort of CMP schedule which will allocate certain quantities of wood to building lumber, other wood to boxes, and so on down the line to paper and paperboard products. There is no lack of wood; it's manpower.

ADVISORY COMMITTEE MEMBERS

The initial meeting of the WFA-OPA Essential Oils Industry Advisory Committee has not yet been held. Apparently some time will pass before the meeting takes place. The process of organizing this Committee is unique. Without exception representatives of an industry are eager to act as members of such Committee. Aside from the kudos of the distinction, they accept the designation as a patriotic duty; and it now is becoming clearer that the perpetuation of these Committees after the war is almost certain because controls of some kind patently will be necessary, at least for a while. The Industry Advisory Committee therefore becomes a more or less fixed part of the economic government of the nation. Members of the Essential Oils industry have evinced a curious caution about accepting membership on the Committee. Some have not even yet answered the invitation, and others have asked for information or explanations, or have declined. The singular situation has naturally focussed attention in Government on the industry. There is much speculation here about the reason. It is not entirely beyond the range of possibilities that there may be no Committee.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116 WEST 14th STREET, NEW YORK 11

March War Check List—Government Regulations

Digest of Federal rules and regulations on price control, allocations and other regulatory measures of cosmetic, soap and flavoring industries issued or proposed during the past month

Peppermint oil prices fixed by amended order of OPA

The amended OPA peppermint oil order effective April 1 gives producers a ceiling of $7; dealers $7.50 and USP redistillers $8.05. Producers who are also dealers must sell what they produce or grow at the producing price of $7; and they must sell what they handle as dealers at $7.50. When they act as brokers which may include that which they grow they are allowed to charge an additional 10 cents per point. Strict measures are provided which carry penalties.

Cosmetic shipping container quota cut 5% and dentifrices 10%

Effective April 1 the shipping container quota for cosmetics was cut 5% and for dentifrices 10% by WPB Limitation order L-317 as revised March 20. Numerous products have been added to the Schedules of the order for quota limitation. A revised schedule B lists additional items for which the use of fibre shipping containers is prohibited. Flavorings are placed on a 65% quota.

Dentifrice Advisory Committee meets to consider reduced quota under L-317

Whether the AA-5 rating will produce enough shipping containers to honor the reduced quota in revised L-317 order of the WPB was considered at a meeting of the WPB Dentifrice Advisory Committee in Washington April 4.

Soap manufacturers may divert fats and oils under amended order 42

Soap manufacturers are allowed to divert a maximum of 250,000 lbs. of fats and oils per calendar quarter from one class of soap uses to another under Food Distribution order 42 amended March 16 provided the overall quota for that period is not exceeded. The new amendments also include the following:

The definition of "abrasive hand soap" is changed. The change consists in the insertion of the words "on a moisture free basis," so that abrasive hand soaps now are defined, in part, as those which on a moisture free basis contain not less than 10% or more than 40% anhydrous soap and not less than 25% abrasive material. It is abrasive hand soap as redefined which continues to be entitled to the 110% quota.

Only 50% of the "washed recovered linseed oil" (linseed oil foots) used by a manufacturer in a calendar quarter is charged against quota.

Certification procedures (for exempting soap from quota) are clarified. Certificates must be taken on sales made to exempt agencies through jobbers. Certificates must also be taken on all deliveries, whether direct or indirect, to anyone who does laundry work under a contract with an exempt agency. Other clarifications in certification procedures are made.

Reporting procedures are clarified so that only one BM-1 Form for any month, and one BM-2 Form for any calendar quarter, need be filed by any manufacturer, irrespective of the number of classes of use for which he may have fats quotas under the order.

Scheduling primer issued by WPB for revised delivery procedures

A Scheduling Primer, explaining the operation of revised delivery scheduling procedures which are spelled out in the War Production Board's General Scheduling Order M-293, as amended, has been issued by the Materials and Scheduling Office of the Operations Vice-Chairman of WPB.

Benzaldehyde put under allocation April 1 by amendment to M-300

Benzaldehyde, derivatives of which are used as an almond scent was put under allocation April 1 under an amendment to M-300 known as Schedule 7. Applications must be made on WPB form 2945.

Glycerine freed for unrestricted purchase for three months

Glycerine was freed for unrestricted purchase and use during the next three months by an announcement March 22 of the War Food Administration. The suspension will continue through April, May and June, and will enable manufacturers of civilian goods to replenish their inventories.

Appraisal of post war markets in detail by CED under way

A detailed business appraisal of post war markets has been organized by the Committee for Economic Development with the cooperation of 581 trade associations in manufacturing fields. The appraisal will embrace about 500 categories of commodities.

OPA rules on drug products using alcohol

Drug manufacturers may not raise ceiling prices on products manufactured with ethyl alcohol over those originally established at the March, 1942, level as a result of the increased Federal tax on that alcohol over those originally established at the March, 1942, level as a result of the increased Federal tax on that alcohol, which became effective April 1, 1944, OPA has ruled.

Interpretations of five sections of new renegotiation act

Interpretations of five sections of the new Renegotiation Act involving war contractors and relating to exemptions under the Act have been announced by the War Contracts Price Adjustment Board. The interpretations apply to the provisions exempting aggregate volume of annual business of $500,000 or less, standard commercial articles, competitive bidding, construction contracts and claims for refunds or credits arising as a result of profits on excess inventories of certain types of exempted products.

Proclaimed list of blocked nationals supplement

Cumulative supplement No. 6 to Revision vi of the Proclaimed list of certain blocked nationals containing additions, amendments and deletions made since Oct. 7, 1943, has just been issued.

Pine oil put under allocation by WPB

By M-365 pine oil was placed under allocation. A small order delivery exemption of 54 gal. per month is provided for.

Bars on sale and transfer of used machinery eased

The bars on the sale and transfer of used machinery for making ice cream, beverages and wines were lifted when the WPB permitted the manufacture of new machinery for such purposes. This removes restrictions over the activities of dealers in this type of used equipment; $500 of new food handling equipment may be purchased by processors under existing regulations.

Abstracts of 7000 chemical patents seized by government to be published

Abstracts of 7000 foreign owned U. S. chemical patents which have been seized by the Alien Property Custodian and are now being licensed to American manufacturers are to be published by the office of the Alien Property Custodian, Chicago 3, Ill. The price is $1 per section or $25 for the complete set of 33 sections.

Information needed for applications for increase in supply quotas

Information which should be given by those applying for increases in their maintenance, repair and operation supply quotas under CMP regulation 5 has been spelled out in Direction No. 18 to that regulation the Controlled Materials Plan Division of WPB has announced.

Maximum import price regulation amended by OPA

Amendment 2 to MIPR listing certain changes in price control of imported commodities not subject to specific maximum price regulations has been issued by OPA.

Senate passes N. Y. bill hitting fraudulent sales

The senate has passed, by 31 to 9, the Mahoney-Reoux "New York State Practice Law" bill, which was designed to ban the misrepresentation of merchandise or prices by advertising or other means. The measure, somewhat similar to one vetoed in 1942 by former Governor Herbert H. Lehman, would also prohibit an employer from selling to employees any goods not manufactured by him or used in his business.

Drawback of Distilled Spirits tax modified

Regulations covering the drawback of taxes on distilled spirits used in the manufacture of drugs and medicines were modified by the Bureau of Internal Revenue March 14 to permit claims for drawback to be filed by manufacture on the products which they still have in their possession at the close of business March 31.

Cosmetic retailers may pass on tax on "luxuries"

Retail sellers of cosmetics and toiletries may continue to pass on to consumers the Federal excise tax on these "luxury" items—which on April 1, 1944, were increased from the present 10 per cent to 20 per cent—the Office of Price Administration has announced.

Steatite talc may be purchased in 12-month supply quantities

Steatite talc, used for filtering flavoring extracts, may be purchased in 12-month supply quantities. Steatite talc for cosmetics and talcum powders may be procured on 6-months supply, under amended Order M-239. Talc mined in New York State no longer may be obtained on 6-months supply. The limit is 2 months. Benzaldehyde, used in flavors and as a scent in soaps, has been placed under monthly allocation. . . All restrictions on use of glycerine have been removed, except the requirement to report. . . More lanolin is expected to be made available for April.

New Brunswick, Canada, produced the highest total annual quantity of honey ever recorded in 1943, 250,000 pounds. . . There will be no isopropyl alcohol available in April. . . No change in supply of ethyl alcohol, although there is a glimmer of hope in the development that WPB has authorized the establishment of two or more wood waste alcohol production plants. . . On April 1, tax on industrial alcohol rose to $9 per gallon with a drawback of $6, leaving the net tax at $3.

There will be another allocation of cellulose acetate for lipstick manufacturers in April, and while the quantity, 400,000 pounds, is greater than in March, the actual volume will be less because the material includes scrap. . . Steel will be available again for manufacturers of lipstick containers.

Plastic collapsible tubes exempted in amendment to M-115

Amendment to Order M-115 specifically exempts collapsible tubes made of plastics, with or without a steel fastener at the bottom, and authorizes manufacture of collapsible tubes made of aluminum, lead, or tin (tin content not to exceed 3 per cent by weight) for dentifrices, on a quota of 75 per cent of the product (by weight) packed in 1941. Manufacturers of the tubes must submit prices to OPA for approval.

Further limitations put on fibre shipping containers by amended L-317

Order L-317, amended March 23, effective April 1, puts further limitations on fibre shipping containers used for dentifrices, cosmetics, perfumes and compacts. Quota percentages have been reduced for dentifrices, from 80 per cent to 70 per cent; for cosmetics, from 65 per cent to 60 per cent; for compacts, from 70 per cent to 60 per cent; for perfumes, from 70 per cent to 60 per cent. Even the thickness of these corrugated containers has been cut from .06 to .05. Containers for soap have been cut to a quota of 80 per cent. Mr. Tysdal will unquestionably warn his Committees more cuts are ahead. Glass containers are considered in slightly better situation. Army is using more metal cans and at least 3,000,000 gross additional glass containers are predicted this year. Another amendment to Order L-103-b on March 23 left glass containers and metal closures for cosmetics, toiletries, hand soaps, and shaving creams, untouched. Closures may be made of waste in addition to blackplate. Directives also have been issued to provide sufficient newsboard to make paper liners for closures for glass containers.

Price ceiling on menthol produced from peppermint expected

OPA is expected to place a price ceiling on menthol, to be produced from the peppermint oil allocated by WPB to the industry which makes menthol. It is anticipated obviously the OPA menthol ceiling will apply to any imported menthol. Word has reached Washington that the Brazilian Government is placing a price ceiling on its menthol. It is understood the Brazilians are prepared to export their menthol at $30.50 to $31.50 per kilo. The impression is that the Brazilians realize they must either meet the North American figures, or their growers must ship their roots out of the country to grow peppermint elsewhere, without a prohibitive ceiling.

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U.S.I. CHEMICAL NEWS

April ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries. ★ 1944

Lists Novel Uses for Claisen-Type Condensations

Current Literature Reveals Many Promising Fields for Investigation

Serving as the "building blocks" from which an ever-widening variety of organic end products are built, such Claisen condensation products as ethyl acetoacetate, ethyl sodium oxalacetate and ethyl benzoylacetate are now classed among the most war-important chemicals. Recent issues of CHEMICAL NEWS have described the use of these U.S.I. products in the manufacture of critically-important atebrin, and in the synthesis of sulfamerazine, vitamin B_1, dyestuffs, and other products.

The potentialities of the Claisen type of condensation reaction, however, reach far beyond its present use. A quick review of 1943 chemical literature, for example, will reveal 50 or more references to Claisen reactions of significance to many research chemists in the organic field. A few of the more interesting references are summarized here:

Pyrazole compounds. Sodium acetoacetic ester condenses with phenyl isothiocyanate to form the sodium salt of α-carbethoxyacetothioacetanilide. The addition of phenylhydrazine forms the 1-phenyl-3-hydroxy-5 pyrazolone anil. This may be distinguished from its isomer 1-phenyl-3-anilino-5-pyrazolone because with *p*-nitrosodimethylaniline the latter gives a brilliant magenta colored azomenthine dye while the former gives only a dull bluish magenta.

Amino acids. (1) Substituted acetoacetic esters dissolved in 80% H_2SO_4 and treated with butyl nitrite give good yields of α-oximino esters. Upon reduction, these esters give amino acids or esters in 69-89% yield. Among those prepared were α-aminobutyric acid, norvaline, norleucine, aspartic acid, glutamic acid, phenylalanine, and *o*-methyltryosine.

(2) The condensation of aromatic diazo compounds with compounds of the alkylacetoacetic ester type may be applied to the synthesis of *α*-amino acids, derivatives of 5-pyrazolone, esters of cyclic β-keto acids, and cyclic β-keto nitriles. The reaction has been used in the synthesis of alanine, valine, leucine, isoleucine, and phenylalanine.

(Continued on next page)

Butyl Alcohol Used in New Coating Compositions

New compositions containing polyvinyl acetate, suitable both for coating and baking on metals, and for the manufacture of films, are described in a recent patent. The composition includes a melamine-formaldehyde resin which has been heated to affect reaction with a butyl or benzyl alcohol.

A second patent awarded to the same scientists describes another group of coating compositions useful for various admixtures and similar purposes. These compositions comprise polyisobutylene and a melamine-formaldehyde resin which has previously been reacted with butanol.

Chocolate bar in these Army emergency field rations is fortified with vitamin B_1. Synthesis of vitamin B_1 and other war-important compounds are using vast quantities of ethyl formate and other U.S.I. products.

Ethyl Ether Now Available in Quantity

Although huge quantities of ethyl ether are required in the manufacture of smokeless powder, ether production has been maintained at levels which assure availability for other war and civilian uses. As we go to press with this issue of Chemical News, the ether situation is such that U.S.I. can offer the product for sale in quantity.

Important Uses

Because of its excellent solvent properties, ether is widely used as a vehicle for fats, oils, waxes, gums, resins and other materials. It is used in extracting fats and in purifying chemicals by extraction and crystallization. It has been used for many years by the shoe, hat, and textile industries for dry cleaning and spot removal. It is also used as a reagent in the synthesis of several important chemicals.

Although the special precautions necessary in using ether, due to its inflammability and tendency to form oxides, involve some inconvenience, this is far outweighed by its solvent and chemical advantages. Its present availability is serving to accelerate wider utilization of these advantages.

Extracts Vitamin E by Novel Process

A recently awarded patent describes the following process for making concentrated vitamin E products. Soybean oil, or other vegetable oils containing vitamin E are subjected to high-vacuum, unobstructed-path distillation. A fraction is separated containing most of the vitamin E and substantial quantities of the impurities contained in the oil. This fraction is then extracted with a solvent selected from a group which includes ethyl alcohol and ethyl ether. Finally the solvent is distilled off effecting further concentration of the vitamin E.

New Replacement for Alkyd Resins Made Available

Aroplaz 1306 Found Suitable for Wide Range of Interior Coatings

In view of the currently tight situation on phthalic alkyd resins, and the prospect that this situation will continue for the next six months, announcement of a satisfactory substitute has aroused wide interest in the protective coating industry. Cancellation of the small order exemption clause from Order M-139 has also served to quicken interest in the product.

Aroplaz 1306, manufactured under a new process developed by U.S.I., has definitely established itself as a practical alternate for phthalic alkyds. It may be used for all types of interior architectural and industrial coatings, white and colored. In water- and alkali-resistance, and in flexibility, Aroplaz 1306 compares favorably with modified phenolic and maleic resin-and-oil combinations.

Color Retention

Initially very pale, the staining properties of Aroplaz 1306 are so slight that white enamels can be made approaching the whiteness obtained with alkyds. Color retention is similar to maleic resin-and-oil combinations. In gloss and gloss-retention it is superior, in both clear and pigmented films, to many alkyds.

Specifications of Aroplaz 1306 are:

Non-volatile:	75% by weight
Solvent:	25% by weight—Mineral Spirits
Acid Number: (solid resin)	10-20
Color: (75% solids solution)	7- 9 (G-H 1933)
Viscosity: (75% solids solution)	Y-Z1
Viscosity: (when thinned further to 50%-solids with mineral spirits)	E-F
Weight per gallon:	7.9 lbs. (at 20°C.)
Reportable oil content:	66% by weight of non-volatile

Availability

The current raw material situation makes Aroplaz 1306 available for prompt shipment without restriction.

Welcome news for coating manufacturers is the announcement that Aroplaz 1306 is now available without restriction.

ADVERTISEMENT—*This entire page is a paid advertisement.*

April ★ **U.S.I. CHEMICAL NEWS** ★ 1944

Simple New Color Test Detects Presence of Sulfas

Requiring only hydrochloric acid and ordinary newspaper, a new test promises to fill the need for a quick, simple method of detecting the presence of sulfonamide compounds in urine. Reported in a recent issue of War Medicine, the method requires neither measurement of the reagent nor filtration of the specimen.

The method utilizes the color reaction which takes place between crude cellulose and the arylamine group in the presence of acids. A blank strip of newspaper is moistened with a drop or two of the specimen; then a small drop of dilute hydrochloric acid (1:4) is placed on the moistened area. An immediate color change to yellow or orange indicates the presence of a sulfonamide compound.

Uses Chlorophyll in Air Conditioning

A solution of chlorophyll in a mixture of ethyl alcohol and water is reported in a new patent to have a definite freshening effect when sprayed into the air. The solution may be used alone, or it may also be used in association with formaldehyde.

Corn Protein Plastic Substitutes for Shellac

Zein, the protein extracted from corn, is dissolved in alcohol to form a lacquer-like solution which dries to a hard, tough, continuous film. This film, according to a recent news item, is superior to shellac in water-repellancy and has taken over many applications in which shellac was used before supplies were cut off. Among the many essential war uses in which zein alcohol solutions are employed is the coating of the paper used to wrap vital airplane parts and other equipment for overseas shipment.

The new lacquer is reported to be of relatively low viscosity so that good thickness can be applied in a single coat. In addition to its insolubility in water it is said to possess complete resistance to oils and greases. Films of the new material blush in much the same manner as shellac.

Claisen Condensations

(Continued from preceding page)

Alkylation of ethyl acetoacetate. (1) Potassium tertiary-amyl oxide in *t*-amyl alcohol used as a condensing agent gives ethyl α-isopropylacetoacetate, ethyl α-isobutylacetoacetate, ethyl α,α-diethylacetoacetate, and ethyl α,α-dibutyacetoacetate.

(2) Boron trifluride used as a condensing agent gives ethyl α-isopropylacetoacetate, ethyl χ-cyclohexylacetoacetate, tert-butyl α-tertbutylacetoacetate, and ethyl χ-benzylacetoacetate from ethyl acetoacetate and the corresponding alcohol or ester.

(3) Quaternary ammonium salts such as benzyldimethylphenyl ammonium chloride or the methiodide gramine (β-dimethyl aminomethylindole) react with the sodium derivative of ethyl acetoacetate to give alkyl derivatives.

Benzoquinoline derivative. β-Napthylamine and acetylacetone form an anil which, upon cyclization with HF unexpectedly gives a linear benzoquinoline. Little has previously been known about this type of compound.

Coumarin derivatives. (1) Ethyl acetoacetate condenses with β-recorcylic acid or its methyl ester, resacetophenone, or similar phenolic compounds in the presence of aluminum chloride to form 5-hydroxy coumarins (otherwise difficult to synthesize) in good yields. For example, 4-nitroresorcinol and ethyl acetoacetate, with $AlCl_3$ form 5-hydroxy-6-nitro-4-methylcoumarin.

(2) Ethyl acetosuccinate condenses with various phenols in the presence of condensing agents such as H_2SO_4, $POCl_3$, P_2O_5, or $AlCl_3$ to form coumarin-3-acetetic acids and their derivatives. For example, resorcinol and ethyl acetosuccinate, in the presence of $POCl_3$ give ethyl 4-hydroxy-4-methylcoumarin-3-acetate.

Substituted guanamines. A group of recent paptents describes the use alkali alcoholates as condensing agents in the formation of substituted guanamines. For example, an alkali alcoholate will cause phenyl biguanide to react with ethyl acetate to form 4-N-phenyl-acetoguanamine; or biguanide and methyl laurate to form lauroguanamine.

Thiazolidenopyrimidenes of barbituric acid type. The use of sodium ethoxide in ethanol as a condensing agent for the reaction of substituted malonic ester with 2-aminothiazoline makes possible the synthesis of monosubstituted thiazolidenopyrimidines. These are further alkylated in the presence of alcoholic sodium ethoxide to form the disubstituted compounds which are analogs of barbituric acids such as veronal, neonal, ipral, and phenobarbital.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

Paint brushes, in which a new type of synthetic bristle replaces hog bristle, are offered in a range of different sizes and types. New bristles, of cellulose acetate, are said to taper lengthwise and to have exterior channels which tend to hold and feed the paint, instead of the flag ends of natural bristle. (No. 799)

U S I

Rubber filters are being used with unusual success on several critically important war jobs, according to information recently released. Filter screens having as many as 6,400 holes per square inch can be compounded to withstand abrasion, high temperatures, strong chemicals. (No. 800)

U S I

Chemical-resistant resurfacing, of concrete, wood, or brick floors, is said to be readily accomplished with a new patching compound. Maker states that compound sets up ready for traffic in one hour, is resilient and resistant to chipping, cracking, and wear. (No. 801)

U S I

Three new intermediates, useful in the synthesis of dyestuffs, pharmaceuticals, and other organic chemicals are now in commercial production. They are: 3:4 dichlor toluene; 3:4 dichlor benzotrichloride; 3:4 dichlor benzoic acid. (No. 802)

U S I

A new series of coatings made of thermosetting resin-base material which cures at 300° F, is said to produce films which are insoluble in practically all organic solvents, vegetable and petroleum oils, acids and alkalies. High salt-spray abrasion, and weathering resistance are also credited to these coatings now being offered for essential war work. (No. 803)

U S I

Better bonding of protective coatings to steel and iron surfaces is the stated result of a one-operation treatment with a new surface-conditioner. Product is said to inhibit rusting prior to painting, and to impart a microscopic coating which assures firm, tenacious bonding of paint. (No. 804)

U S I

A polyamino salt replacement is offered for use in the production of bouillon, soup, stews, etc. The product is sodium glutamate, and is said to contain many amino acids desirable from flavor and nutritional standpoints. (No. 805)

U S I

A wood priming coat, promising superior bonding of high scratch-resistant finishing lacquers to furniture and other objects, is announced as a development which will be available after the war. (No. 806)

U S I

A new cleaner, specially formulated for removing gummed labels from plastic glass sheets and parts, is announced. (No. 807)

U S I

Protecting concrete as well as brick and stucco surfaces against moisture is reported to be feasible with a new product made of irreversible inorganic gels. The product is said to react with the lime hydrate of the masonry to form a fine, tough, welded-on coating which permits the masonry to breathe, but impedes absorption of water. (No. 808)

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New Products, Ideas and Processes

Lanolin replacement

A new replacement for Lanolin in pharmaceutical and cosmetic products may be found in Lanolike, put out by John T. Lloyd. In using this replacement, the company says, there is no need for changing the formulae of most ointments and creams or for adjusting the manufacturing procedure.

White sachet filler

The National Sawdust Co., 76 North 6th St., Brooklyn 11, N. Y., announces the opening of a new department exclusively devoted to white sachet filler. It also supplies fine ground red cedar powder. The filler is said to be highly absorbent, retaining the scent better than anything else heretofore offered on the market. Complete details as to how the filler may be used to advantage to capitalize the growing trend toward making sachets will be sent to anyone interested, together with samples.

Announcements

Charles B. Chrystal Co. moves

Charles B. Chrystal Co., Inc., importers and grinders of minerals, glass and colors has moved to larger quarters at 53 Park Place, corner of West Broadway, New York, N. Y. The warehouse and mills remain in Jersey City.

Metal replacement packaging

Metal replacement packaging is the subject of a booklet just published by Milprint, Inc. The booklet shows the various ways in which a cellophane pouch can be used to line either a cylindrical or rectangular carton.

Skin care and make-up

"The Artistry of Cosmetics," a pamphlet analyzing skin care and giving advice on how to apply make-up has been prepared by Philip D. Adams, biochemist and director of the Woodbury Skin Research Laboratory.

New marketing chart comes out

The third edition of "A Basic Marketing Chart of the United States" has just been published by the Research Co. of America, a national research organization of New York. All the data in this post-war blue-print is reported by states, by geographic divisions, and for the U. S. Among the questions answered in this 1944 chart are: How has the civilian population shifted? What is the income of Americans? How much income taxes do they pay? What are the sales of war bonds and life insurance? What is the industrial output in wartime compared with prewar?

G. W. Pegg, consulting chemist

George W. Pegg, Ph.C., who has had many years of practical experience with some of the larger houses in the drug and cosmetic industry, has opened an office as a consultant to assist in the development of formulas for drugs, cosmetics and flavoring extracts; improvements in processes of manufacture; preparation and revision of labels; advice on industrial alcohol tax claims and reports; state and municipal requirements regarding registrations, licenses and permits.

G. W. Pegg

Mr. Pegg is located at 152 West 42 St., New York 18, N. Y., and the Washington address is 2121 Virginia Ave. N.W., Washington 7, D. C. This office is in the charge of Dr. George W. Hoover.

Kimble Glass Co. Moves

The Chicago office of the Kimble Glass Co. is now located at 20 North Wacker Drive (Civic Opera Building), it was announced by Bruce Puffer, Chicago manager.

Kay Fries Chemicals gets award

The Army-Navy "E" Production Award was made to the men and women of Kay Fries Chemicals, Inc., West Haverstraw, N. Y., on April 4, 1944.

Opportunity in cosmetic field

The Drug and Cosmetic Industry by Clare Olin Ewing, B.S., M.S. has just been published—No. 47 of the 75 Vocational and Professional Monographs put out by the Bellman Publishing Co., Boston, Mass. The manuscript of this vocational guidance booklet was written by a qualified expert. It was designed to supply the following information about the drug and cosmetic field under normal conditions: personal qualifications and scholastic training needed, an analysis of employment opportunities, remuneration received, chances for advancement, advantages and disadvantages, and the possibilities for both men and women.

Book Review

TOXICOLOGY & HYGIENE OF INDUSTRIAL SOLVENTS, *edited by K. B. Lehmann & F. Flury, translated by Eleanor King and Henry F. Smyth, Jr. Published and distributed under Alien Property Custodian License No. A-68 by The Williams & Wilkins Company, Baltimore, Md., 1943, 378 pages. Price $5.00.*

One of a number of books published under license from the Alien Property Custodian in the public interest.

The contents are predominantly of a medical nature with experimental-toxicological investigations forming the nucleus of the book. These studies are divided by groups like hydrocarbons, chlorinated hydrocarbons, alcohols, esters, glycols and others. Each group is considered from the viewpoint of chemistry, chemical analysis, skin injuries, dangers to health and health protection. Anyone having contact with industrial solvents will find this book extremely useful. In fact, it is believed to be the most detailed book on the subject.

Thus, in the first chapter one reads, "Non-polar solvents . . . evaporate more quickly than similar polar compounds. In the polar solvents . . . the molecule (*is*) divided into an active and a non-active part . . . probably on the surfaces of contact the active group of polar molecules is turned toward the interior of the liquid, and the non-active part is turned toward the outside." And in a later portion on page 15, "evaporation from solutions of lyophilic colloids usually occurs more slowly, especially since mutual influencing of the components of the solution almost always occurs, and the final solvent residues are given off more or less slowly."

These quotations are made to give an idea of the thoroughness with which the book is written. Its fundamentals are not limited to toxicology alone. They are much farther reaching than that. The material is up to date in every respect. Only one case of proof-reader's error was found by this reviewer (page 64), and that is remarkable.

The publisher is to be complimented for making this book available. The translators, Drs. Smyth and King, have put into English an easy reading and valuable work. They are to be congratulated for their tremendous task, too.

Anyone concerned with solvents will enrich his library and his own knowledge with this book. It is really outstanding.—MGdeN

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Here and There Among Our Friends

▸ Ernest L. King, Sr., has resigned as president of the J. R. Watkins Co., Winona, Minn., and his son, Ernest L. King, Jr., formerly vice president has been elected president. Failing health was given as the reason for the elder Mr. King's withdrawal from active leadership after forty years of service with the company. He became president in 1931 after the death of Paul Watkins, nephew of the company's founder. His son has been general manager since 1941.

▸ C. A. Willard formerly chief of the Cosmetics Unit, Drugs and Cosmetics Section of the War Production Board who resigned to become comptroller for the Elizabeth Arden Sales Corp., New York, N. Y., has resigned that position.

▸ First Lieut. Paul J. Lynch, son of Joseph C. Lynch of the New York office of the Pacific Coast Borax Co., took part in the Tunisian and Sicilian campaigns as a member of the Ninth Division Infantry with which he has been connected for three years. He is now in England, according to advices received by his father. All told, he has spent 19 months over seas and reports that he is in excellent health.

▸ Dr. Samuel Isermann, president of Van Dyk & Co., Bellville, N. J., has returned to Los Angeles, Calif., after spending some time conferring with the executives in the main office of the company.

▸ Oscar Beiser, formerly of the Edward T. Beiser Co., Inc., Stamford, Conn., has joined the organization of Naugatuck Aromatics, Division of the U. S. Rubber Co., New York, N. Y., in an executive capacity. His broad experience in the essential oil and aromatic chemical industry equips him well for his new duties.

▸ Dr. Doane Hage of the New York office of the Arthur Colton Co. reports that his son, Sgt. Doane Hage, Jr., who was shot down while making a flight in the western European area, November 9, 1942, but who was reported on May 25 to be well and safe although a prisoner of the German government, is making good use of his time, according to letters received from him. Sgt. Hage reports that he is getting all the packages that are sent to him and that he receives mail regularly; but is unable to write many letters in return. He reports that he is in excellent health, is well cared for and is spending much of his spare time in serious reading. Sgt. Hage was aerial gunner connected with the 423 Bomber Squadron of the U.S.A. Air Corps, located in England.

▸ Gustavus A. Pfeiffer has been appointed chairman of the board of William R. Warner & Co., New York, N. Y.

G. A. Pfeiffer

Dr. Marvin R. Thompson has been made president and general manager of the concern, succeeding Mr. Pfeiffer. Dr. Thompson formerly held the position of vice-president of the company and director of the Warner Institute for Therapeutic Research.

Mr. Pfeiffer was formerly president, treasurer and general manager of the company. He was also president of Richard Hudnut Inc. and was active in various official capacities for many years in the old Manufacturing Perfumer's Association, the American Manufacturer's of Toilet Articles and the Associated Manufacturers of Toilet Articles which preceded the organization of the Toilet Goods Association.

▸ Henry A. Colgate, president of the Seeing Eye of Morristown, N. J., which trains dog guides for the blind has requested the public to stop soliciting funds to purchase dogs for sightless service men. Records show that few service men have been blinded in action he reports; and the demand for the dogs can be filled by the regular schedule of the organization.

▸ Conchita Cintron, the only woman bull fighter in the world, who is associated in a merchandising capacity with the toilet goods house of Theodore Schwarz, Mexico City, Mexico, which offers Productos Vilma, was wounded in a bull fight March 22 while displaying her talent at Bogota, Colombia. Despite a large leg wound she dispatched two bulls before surrendering to the crowd's insistence that she leave the arena.

▸ J. Mervin Rosenberger, vice-president of Smith, Kline and French, Inc., Philadelphia, was elected to the Board of Trustees of the Philadelphia College of Pharmacy and Science, at the annual meeting of the members of the college on March 27. Mr. Rosenberger will serve for three years. Trustees re-elected for a similar period are Dr. W. Wilson McNeary and Col. Samuel P. Wetherill, of Philadelphia, and Dr. Joseph Rosin, vice-president of Merck and Co., Rahway, N. J.

▸ F. J. Solon, vice-president and director of sales of Owens-Illinois Glass Co., Toledo, Ohio, has joined, temporarily, the staff of the War Production Board at Washington. Mr. Solon, widely known in the glass industry and associated with the O-I sales organization for the past quarter of a century, will be away from the company and its Toledo general offices for a period of about 90 days. He began his new duties April 1. In his specific assignment at Washington, Mr. Solon will devote his efforts primarily to container problems, calling upon a long demonstrated organizing ability and overall knowledge of the packaging industry. He will be associated with Harold Boeschenstein, president of Owens-Corning Fiberglas Corp., who is director of the Production Controls Bureau and Acting Director of the Forest Products Bureau of WPB.

▸ John Paul Remensnyder has been appointed vice president in charge of sales of the Heyden Chemical Co., N. Y., N. Y.

▸ Irving I. Goldstone for the past 18 years with Jay Thorpe as production director and purchasing agent has been appointed general manager of Ann Haviland, New York, N. Y., manufacturer of perfumes and bath preparations.

▸ Eric N. Blackstead has been appointed sales and advertising manager of the Ansbacher-Siegle Corp., Rosebank, S. I., N. Y. Mr. Blackstead began his career at the age of 19 in 1922 as chief chemist for the Spencer Lucas Co. makers of dry colors. In 1928 he was appointed chief chemist of inorganic colors in the Brooklyn plant of the A. S. Ansbacher Co. prior to its consolidation with the Siegle Corp. whose plant was located in Staten Island.

▸ Benjamin Kapp has been appointed West Coast representative for van Ameringen-Haebler, Inc., New York, N. Y., and will make his headquarters at the Los Angeles office of the L. H. Butcher Co. and at other offices of the Butcher company in other cities. Mr. Kapp succeeds Joseph B. Darr who is now in the army. Stocks are carried by the L. H. Butcher Co. in San Francisco, Los Angeles, Seattle, Salt Lake City and Portland.

"Guess you'll have to take that box home unwrapped—

We're saving our Paper to help plaster Hitler"

That merchant has the right idea. His customer can get that package home all right without the usual extra counter wrapping.

Use Less Paper Because

It takes 25 tons of blueprint paper to make a battleship.

700,000 different kinds of items are shipped to the Army — and they're paper-wrapped or boxed.

"K" ration containers, shipped from the Eastern Seaboard alone, take 662 pounds of paper a month.

Each Signal Corps radio set takes 7 pounds of kraft paper, 3 pounds of book paper.

Each propelling charge for 155-millimeter shell takes 3/5 pound of paper.

Use Less Paper These Ways

Eliminate fancy wrappings. Special gift wrappings, holiday wrappings should be used only if they replace and do not supplement regular wrappings. Such wrappings should be saved for re-use next year.

Eliminate double wrappings.

Sales people should be instructed to change the familiar: "Would you like this wrapped?" a tradition of courteous store service, to something like, "Won't you take this unwrapped, the Army needs our paper?"

Group wrapping should be practiced in every possible instance.

But our Army can't ship the weapons and the ammunition and the food our invasion forces need without plenty of paper wrapping.

That's why Uncle Sam is asking you and every other storekeeper in America to help save paper in this and every other way you can think of.

Remember, every piece of wrapping paper, every cardboard container you manage to save is so much more paper and paper board available to the Army and Navy in shipping precious supplies to our boys.

Get busy today and work out your own paper-saving methods—yes, and sell your customers on helping you save paper.

And, last but not least, if there's not a Paper Conservation Committee already organized in your town, get together with your fellow merchants and organize one. For paper conservation, you can take it from the War Production Board and the Army, is one of the biggest home-front war jobs and one of the most important.

This advertisement prepared under the auspices of the War Advertising Council in co-operation with the Office of War Information and the War Production Board.

LET'S ALL USE LESS PAPER

Space for this advertisement contributed by The American Perfumer and Essential Oil Review

Trade Jottings for the Month

MENNEN CO., Newark, N. J., backed by reports that "athlete's foot" is definitely on the increase, will launch the heaviest drive yet for Quinsana foot powder backed by the biggest ad budget it has ever appropriated for the product.

MARY CHESS, INC., New York, announces the resignation of Carley Hawkins, former vice-president and director. She was married to Allen Dawson, of the State Department, Foreign Division, in Washington on March 16, and will live in Havana, Cuba.

POND'S EXTRACT CO., New York, has recently launched a nationwide campaign for its cold cream, dry skin cream and vanishing cream products. Full-page advertisements on cold cream are scheduled in leading national magazines.

SEEMAN BROS., INC., New York, has launched a campaign in six Metropolitan newspapers for Pique Kitchen Magic. Spot announcements on the "Make-Believe Ballroom," WNEW, New York, are also utilized.

SHULTON, INC. recently welcomed back Miriam Gibson, publicity director of the company who spent her three-weeks vacation in Canada. Also returning to New York was Irma Ericsson, Shulton advertising manager. Miss Ericsson spent the first week in Florida in consultation on fall advertising plans with William L. Schultz, President of Shulton, before starting her vacation.

REVLON PRODUCTS CORP. announces that Mr. William S. Hauptman, sales supervisor of the company's retail division for the past five years, joined the armed services on March 4. Employees of the firm gave him a luncheon, at which Mrs. Hauptman was a guest, and presented him with a war bond.

PAUL DREIFUSS CO. announces that Mr. Fred Farnell has joined his organization to handle the middle Atlantic states. Miss M. A. Bilgore is assisting Mr. Dreifuss in the coverage of the metropolitan department stores. The company has taken over eastern distribution of Toujenais of California who feature the new Congo Eau de Parfum.

MEIER & FRANK, Portland, Ore., announce the return of Charles Henniger, retired from the U. S. Army, to take charge of the toilet goods department.

ELIZABETH ARDEN, New York, announces that Mrs. Eleanor M. Winslow, formerly Merchandising director of "Ladies Home Journal", has joined the cosmetic firm as an executive.

PEPSICOLA CO., New York, is endorsing the drive and paying the space costs of the Nationwide campaign of the United States Cadet Nursing Corps is launching to recruit Negro women for nursing schools.

INA DE CRIS cosmetics and perfumes will be purchased outright by Margaret Keating Longcope. Negotiations have just been completed for the purchase, which includes complete inventory of merchandise on hand and all original formulas. Ina de Cris, Inc., will be retained as a firm name, and new offices have been opened at 654 Madison Ave., N. Y. C. Mrs. Longcope was formerly an account executive with Lennen and Mitchell, and more recently consultant on sales and merchandising.

ELIZABETH ARDEN introduced her new color harmony "Montezuma Red", created for the Women's Reserve of the United States Marine Corps at a cocktail party held March 28 at the Waldorf-Astoria. The lipstick, rouge and nail polish in this color will fill a definite need, as specified by the Letter of Instructions to Officers: "Lipstick, if worn, shall be the same color as cap cord, winter service, and shall be neatly and thinly applied. Rouge, if worn, shall be inconspicuous. Colored nail polish, if worn, shall harmonize with the winter service cap cord and lipstick."

Beauty editors of the prominent magazines and newspapers who attended the gathering later watched a style show of all the different uniforms of the women Marines.

HELFRICH LABORATORIES OF NEW YORK, INC. announces the appointment of Arthur J. Connolly as general manager. He was for eighteen years with Harold F. Ritchie & Co., and more recently with Horlick's Malted Milk Corp. He is also secretary-treasurer of the Foragers of America.

LUFT-TANGEE LTD., Canada, will begin its largest advertising campaign May 1 for new Tangee Petal-Finish face powder. Canadian daily newspapers, national monthlies and business publications, as well as English and French rotogravure sections, will be used.

Hand-care survey

Despite the increased tempo of wartime living, 98 per cent of the girls find time to keep their nails looking trim, according to a recent survey among 1,100 women readers of Fawcett Publications who replied to the Fawcett Beauty Reader Forum questionnaire on hand and nail care. Three out of four manicure only at home, while 19 per cent occasionally visit a beauty shop.

Although 17 per cent of the girls find that, with care, a manicure can last longer than seven days, 58 per cent feel that a weekly manicure is necessary. Nearly 97 per cent use liquid nail polish, brown red continuing as the most popular color. Of the 58 per cent who report using a cuticle product, 77 per cent prefer a liquid cuticle remover, 32 per cent oil, and 17 per cent cream.

The forum report section on hand care revealed that 98 per cent of the women questioned use a hand lotion or cream, preferring lotion in three out of five cases. Of those using lotion, 18 per cent vote for three times a day as their standard application, as do 13 per cent of the cream users.

Four out of five of those who prefer a hand lotion continue its use all year round, with a similar percentage of cream fanciers also reporting no slack season. Almost two-thirds, 63 per cent, own only one bottle of hand lotion, 78 per cent one jar of cream. Very few deem it necessary to own more than two containers of either hand preparation.

The survey also reports that 77 per cent of the girls use their hand lotion on rough elbow surfaces as well as on the hands; 65 per cent use it on arms, 48 per cent on legs, and 31 per cent on their ankles.

Make-up Base

Make-Up Excipient. *Fr. Pat. 50,272.* The make-up excipient is prepared by mixing molten non-saponified wax with a coloring substance, adding a volatile solvent, introducing a hot solution of borax, heating, cooling and perfuming.

Nail Polish Remover

Composition for Removing Hardened Nail Polish. *U. S. Pat. 2,268,642,* Jan. 6. A composition of creamy consistency is prepared containing water, a water-soluble soap and free stearic acid in greater proportion than the soap (the free stearic acid and soap, such as potassium stearate, constituting at least about 15 per cent of the composition), and a solvent for nitrocellulose in effective amount for solvent action. Various manufacturing details are given. *(C. A. 36)*

PERFUMERS

BASIC MATERIALS

BASIC

PERFUME

SPECIALTIES

BUSH AROMATICS

INCORPORATED

136 LIBERTY STREET
NEW YORK CITY

Cable address: ARROBUSH
Telephone: WOrth 2-6557

Imitation Oils

OIL OF TUBEROSE

GERANIOL

HYDROXY CITRONELLAL

SEELEY & CO.

INCORPORATED

136 Liberty St. • New York City

Many years ago we first offered fine paper boxes to cosmetic manufacturers. It is significant that since then most of the concerns with whom we began business still call upon us to meet their needs.

•

Despite the shortage of raw materials it is our pledge never to depart from the high standard of quality that has always been identified with KARL VOSS paper boxes.

•

There is no finer cosmetic container than a KARL VOSS box.

•

KARL VOSS CORPORATION

DIVISION OF SHOUP-OWENS INC.

HOBOKEN NEW JERSEY

NEWS and EVENTS

Import control eased on neroli, mandarin and vanilla beans

Neroli oil, orange and mandarin oils, including terpeneless, Tonka beans and vanilla beans were removed from general import order M-63 by the WPB by means of an amendment on March 30.

How to pass on increased excise taxes to consumers

Increased excise taxes on toiletries and cosmetics—jumped from 10 per cent to 20 per cent on April 1—may be passed along to consumers, under MPR No. 393 (Packaged Cosmetics), but the tax must be separately stated. If the previous 10 per cent was included in the price, the additional 10 per cent must now be separately stated. Incidentally, Government reports from all parts of the country brought word that toiletries and cosmetics sold in volumes greater than even Christmas sales shortly before the April 1 excise taxes became effective.

The 10 per cent tax was in effect at the time maximum prices for cosmetics were originally established. Most retailers have stated and collected this tax separately, and may continue to state and collect the increased tax separately, making no change in maximum retail prices already established.

In a few cases, the retailer's maximum price previously established may have included the excise tax. In these cases, the additional tax of 10 per cent may be collected from the purchaser provided it is separately stated. Here, too, no increase will occur in the retailer's established ceiling prices.

The method by which retailers may pass on collectable taxes to consumers is provided in Maximum Price Regulation No. 393—Packaged Cosmetics—which became effective May 26, 1943.

BIMS arrange three golf tournaments for 1944

At a meeting of the executive committee of the BIMS of New York April 5, three tournaments were planned for the coming summer. Tuesday, June 27, Crestmont Golf Club, West Orange, N. J.; Tuesday, July 25, Siwanoy Country Club, Bronxville, N. Y.; and Thursday, August 24, Wheatley Hills Country Club, Wheatley Hills, L. I. All of the foregoing courses are new to most of the members.

F. H. Leonhardt honored on fiftieth anniversary with Fritzsche Brothers

Frederick H. Leonhardt, president of Fritzsche Brothers, Inc., New York, N. Y., who completed fifty years of service with the company April 15th, was given a testimonial dinner on that evening at the Hotel New Yorker by the executives and directors of the company in which 266 members of the organization also took part. George L. Ringel, vice president, acted as toastmaster and introduced the various speakers who paid affectionate tribute to their friend and associate. During the course of the celebration Mr. Leonhardt presented each of the employees with a government bond, which was deeply appreciated.

F. H. Leonhardt

Mr. Leonhardt began his association with Fritzsche Brothers in 1894 and took charge of the technical work of the organization. In 1913 Mr. Leonhardt was given full power of attorney; in 1919 he was elected vice president and on the death of the late F. E. Watermeyer was elected president. Under Mr. Leonhardt's leadership, the organization has considerably enlarged the scope of its activities, doing a general exporting and importing business and buying materials from producing centers throughout the world and selling all over the world wherever there existed a demand for its finished products.

The enlargement and modernization of the company's Seillans (Var), France, factory and the full ownership of the Clifton, N. J., plant have occurred during Mr. Leonhardt's administration as president. The destruction of the Beekman St. quarters by fire in 1935 led to Mr. Leonhardt's decision to seek new and larger quarters which were then badly needed and which were found in the Port Authority Commerce Building where the company now occupies substantial space.

Roger & Gallet restrain use of Flame d'Amour as trade-mark infringement

Roger & Gallet, New York, N. Y., and Parfumerie Roger et Gallet have been granted a temporary injunction against Prince de Bourbon & Dorelis, Inc., restraining the latter from using the trade name Flame d'Amour which the plaintiffs claimed was an infringement of their trade-mark, Fleurs d'Amour. In its decision the court said the test is whether there is a deceptive similarity between the plaintiffs' trademark and the accused infringement. The court said in part: The translation of the plaintiffs' trade-mark "Fleurs d'Amour" is conceded to be "Flowers of Love." The defendant contends that the word "Flame" in its trade-mark, is taken from the French word "Flamme," which might well be translated into "Passion" but they have anglicized the word for purposes of their own, in which sense it would seem to convey a colloquial meaning in English. The defendant has chosen, in the court's opinion, a trade-mark that so closely resembles the mark of the plaintiffs that it may be considered to be deceptively similar. The meaning of the two names are different but that is not conclusive of no infringement, since one brand of perfume may easily be substituted for the other to the unsuspecting.

Father of Arthur Drury dies in Chicago at age of 79 years

Henry Drury, who was associated in business with his son Arthur Drury from 1921 until 1928 when A. C. Drury & Co. was incorporated, at which time he was made secretary, died in Chicago March 13 at the age of 79 years. He was active in business up to a year ago.

THE
IDEAL
LUBRICATOR
FOR CLOTHING, WOOLENS & CLOTH

CED-R-WOOD

Spray this PLASTICISING *CEDAR-COATING* for PRESERVING Valuable Garments. Makes them SOFT, PLIABLE and Resistant to DRY ROT. Also keeps out MOTHS.

SPARHAWK COMPANY
SPARKILL • NEW YORK
U. S. A.

Made from the world's finest crude beeswax.

Chemically tested for quality and purity.

Bleached by sun and air—nature's own method.

BEEHIVE BRAND
Beeswax

And because of its superior quality you can use less and still get a finer finished product. Guaranteed pure...guaranteed always the same.

Will & Baumer Candle Co., Inc.
Established 1855
SYRACUSE, NEW YORK

Spermaceti Cerosine Yellow Beeswax
Composition Waxes Red Oil Hydrotear
Stearic Acid

Founded 1854

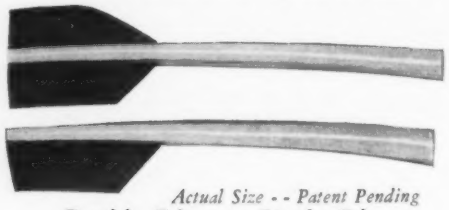
FEZANDIE & SPERRLE, Inc.
205 Fulton Street, New York City
HIGHEST STANDARD

Colors and Dyes for Cosmetics, such as

LIPSTICKS	PERFUMES
ROUGES	LOTIONS
FACE POWDERS	SHAMPOOS
MASCARA	CREAMS
SOAPS	Etc.

Your inquiries are invited

MASCARA BRUSH



Actual Size - - Patent Pending
Double Edge or Single Edge
Immediate Delivery

J. LESHIN
565-5th Avenue, New York 17, N. Y.
Plaza 8-0328

Popularity of cold waving shown at record International convention

Cold permanent waving almost dominated the International Beauty Shop Owners convention and exhibition at the Hotel Pennsylvania, New York, N. Y., on March 13, 14, and 15. It was estimated that cold waving has invaded the field of machine permanent waving to the extent of 50 per cent. Practically every concern that offered a new machineless and heatless permanent wave preparation gave demonstrations; and while some of the older methods were shown, there were few demonstrations. Arnold Willat who is reputed to be the inventor of the cold permanent waving process in 1934, has lectured on the theory of cold waving in the last two years during which time it has shown an amazing development. Whether the new process will justify all that is claimed for it is more or less speculation, but judging from the interest taken at the exhibition, every beauty shop owner is pretty much sold on cold waving.

The convention and exhibition as usual was under the skillful direction of Joseph Byrne, and it attracted larger audiences this year than even before. It might also be added that there was a much more serious approach to the problems confronting the industry than usual and close attention was paid in the various classes in hair styling. The afternoon post graduate classes, the numerous lectures on pertinent subjects and the fashion show also commanded much interest. The convention came to a close with a farewell dance on the Roof Garden Wednesday evening. There were about 100 exhibitors. A new attendance record was made.

American Home Products sets up new Food Division

In an important reorganization of its operations, American Home Products Corporation has announced the formation of a new food division to embrace Harold H. Clapp, Inc. (baby foods), G. Washington Coffee Refining Co., and P. Duff & Sons (prepared baking mixes). Eventually six operating divisions will be set up to handle the products of its many manufacturing and subsidiary organizations.

Henry W. (Tex) Roden, president of Clapp, has been elected a vice-president of American Home and will be in charge of the new food division. Other divisions to be set up within American Home will cover:

(1) Pharmaceutical, biological, nutritional and vitamin products.

(2) Household products.

(3) Cosmetics (Louis Philippe, etc., probably including Kolynos)

(4) Packaged drugs, such as Anacin, BiSoDol, etc.

(5) Foreign division, which will presumably handle foreign sales for all American home products.

Chicago Drug & Chemical Ass'n elects officers for coming year

At the 44th annual meeting of the Chicago Drug & Chemical Association March 30 at the Drake Hotel, Chicago, the following officers were elected for the coming year:

F. Dean Hildebrandt

F. Dean Hildebrandt of Hildebrandt & Co. was elected president; Harry E. Dunning of Albert Verley & Co., vice-president; Martin B. Vance of Givaudan Delawanna, Inc., secretary, and Edgar E. Brand of Sonneborn Sons, Inc., treasurer.

Directors for the coming year are: Thomas A. Brennan of Norwich Pharmacal Co.; William M. Medberry of International Cellucotton Products Co.; Joseph F. Rudolph of U. S. Industrial Chemicals, Inc.; James M. Murphey of Solvay Sales Corp.; Bruce Puffer of Kimble Glass Co.; Gerald F. Pauley of Monsanto Chemical Co.; Talmadge B. Tribble of Magnus, Mabee & Reynard, Inc., and Ray Morris of Orbis Products Corp.

Shortage of waste paper causing concern in industry

There is a serious lack of salvaged waste paper to substitute for wood. People are not responding with sufficient fervor to the appeal to save waste paper. Neither has there been decisive success in the plan to induce business and housewives to re-use second hand containers. Part of that failure is due to the reluctance to use some one else's containers, and part is due to the fear of disease. There has been one authenticated case of a virulent disease transmitted by a used egg-container. A bill has been introduced making the destruction of waste paper a misdemeanor, and asking the States to make similar laws. England has such law, but WPB people feel the law could not be legally enforced. OCR says retail wrappings will be 50 per cent less this year than in 1942. The answer is, of course, to save on the use of paper and containers in every way, and to actively help the drive to salvage waste paper. A number of candy and food chains have succeeded in recovering millions of containers for re-use.

Reuse container test to determine if practice is sound

A reuse container test is being conducted by the Majestic Trading Corp. in Chicago under the auspices of the Assn. of American Soap & Glycerine Producers. For 90 days the company will purchase reusable shipping containers from emptiers and others after OPA issues its price schedule in the Chicago area and return them at cost to the original users. The test will determine whether or not such an operation is practical and can be extended to other areas as needed. Any manufacturer of bar or packaged soap or cleanser sold for household use who sends into the Chicago area during the test period shipping containers that are spot sealed or taped may participate. It is not practical, however, to salvage containers in reusable condition that have fully sealed flaps. Details on participation will be supplied to all who are interested by the association.

Paramount Cosmetics in new and larger quarters

Paramount Cosmetics, Inc., distributor of the Renee Thornton line of perfumes and toiletries, is now established in its new and larger quarters at 2 West 47th St., New York, N. Y., occupying the entire third floor of the building.

In the new quarters ample provision has been made for laboratories, packing, shipping and storage departments as well as a conference and display room which adjoins the general offices. A very beautiful and modern salon has also been fitted up for demonstrations, artistic makeups and expert facial treatments.

Flavoring manufacturers to meet at Hotel New Yorker

Plans are being formulated for a record meeting of the Flavoring Extract Manufacturers Ass'n at the Hotel New Yorker, May 22 and 23. E. L. Brendlinger is in charge of the convention arrangements. Members and guests planning to attend are urged to make hotel arrangements promptly. Dr. Clarke E. Davis is in charge of the program which promises to be instructive and informative.

Fund to finance aid to colleges of pharmacy

A fund of $100,000 to finance aid to colleges of pharmacy whose income has been drastically cut by the wartime reduction in enrollments was voted by directors of the American Foundation for Pharmaceutical Education at their annual meeting.

B-W LANOLIN U.S.P.

EVENTUALLY—For better creams, with economy

B-W Lanolin the superior quality puts into your cream that which gives the skin that smooth soft velvety feeling.

B-W Lanolin will never cause your cream to darken, is best by test and contains over 15% free and combined Cholesterol.

No other base used in your cream, equals the merits of B-W Lanolin.

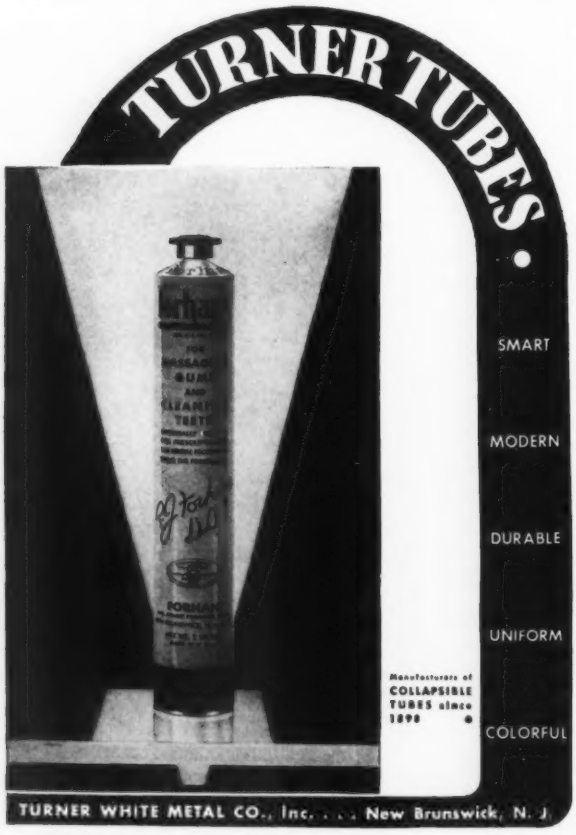
B-W HYDROPHIL (Absorption Base) Made in U.S.A.

BOPF-WHITTAM CORPORATION

Executive Office
Laboratory and Factory
LINDEN, N. J.

America's Original Lanolin Producer
ESTABLISHED 1914

Sales Office
509 Fifth Ave.
NEW YORK, N. Y.



Paper Boxes for the Cosmetic and allied trades . . . .

Present conditions preclude us from accepting any orders at the present time for immediate delivery.

Eugene K. Plumly Co.
Federal and Juniper Streets
Philadelphia 47, Pa.

Toiletries must conform to medication requirements in Canada

Lotions, toilet water, perfumes and other similar preparations containing alcohol will be made to conform to certain medication requirements and must not be sold for beverage purposes under an amendment to the Liquor Control Act due for second reading in the Ontario (Canada) legislature. The measure does not ban the sale of these preparations, but places the onus on the purchaser and seller if they are used for beverage purposes, for which penalties are provided.

As the act now stands, the only preparation mentionel is perfume. The amendment adds lotions, toilet water and others. It is not regarded as harmful to the cosmetic industry.

A number of deaths have been reported in Ontario through the drinking of such preparations.

Foundation sets up 130 scholarships in colleges of pharmacy

130 scholarships in 64 colleges of pharmacy will be established with the funds allotted for the purpose by the American Foundation for Pharmaceutical Education, it has been announced by Dr. E. L. Newcomb, secretary of the Foundation. Dr. Newcomb, who is also executive vice-president of the National Wholesale Druggists' Association, said the scholarships have a value of $400.

The Foundation, which was established to broaden pharmaceutical education and create new opportunities for ambitious young men and women in the drug field, has received contributions of more than $40,000 from leaders in the industry, according to the announcement.

F. Stock and R. Fischelis will speak at Proprietary Ass'n dinner

Fred Stock, chief of the drugs and cosmetics section of the WPB chemicals branch, and Robert P. Fischelis, chief of the medical and health supplies branch of the office of Civilian Requirements, will be among the speakers at the 62nd annual convention of the Proprietary Association of America, which will be held at the Biltmore Hotel, New York, May 15-17.

Chain drug stores convention in French Lick Springs June 4-6

The convention of the National Association of Chain Drug Stores will be held June 4, 5, and 6 at French Lick Springs Hotel, French Lick, Indiana.

Atlantic Drug & Chemical Club elects officers

Members of the Atlantic Drug & Chemical Club chose the following officers for the coming year at their second annual meeting: President, W. A. Volk; vice-president, H. G. Reilly; treasurer, E. E. Bengston. The position of secretary, held at present by R. D. Rainey, will be filled at the next meeting. Members elected to the board of Directors were: J. C. Bagwell, E. D. Crane, George R. Fellows, W. R. Cranberry, Fred Lewis, and J. W. Renshaw.

Amendments to Ontario, Canada liquor control act not harmful

Proposed amendments to the Liquor Control Act of Ontario, Canada, are not harmful to the industry according to an analysis of the Toilet Goods Manufacturers Ass'n of Canada.

Larger use of aluminum closures permitted by amendment to L103B

The use of aluminum within quota limits for glass container closures by packers of food and medical products which were packaged with aluminum closures before restrictions were imposed on the metal are permitted by L103B as amended.

BRIDGEPORT...

For the past two years our facilities have been devoted almost exclusively to the production of war materials. We have been fortunate, in that we have been able to handle this work on the same equipment used for our regular peace time products, and, consequently, when material again becomes available for lipstick containers, vanity cases and other metal cosmetic items we will be prepared to start producing our regular line immediately. If you too are planning your post war program, we will be glad to assist you.

THE BRIDGEPORT METAL GOODS MFG. CO.

Established 1909

BRIDGEPORT 'PHONE BRIDGEPORT 3-3123 CONNECTICUT

VANITY CASES • ROUGE CASES • PASTE ROUGE CONTAINERS • LIPSTICK HOLDERS (ALL TYPES) • POWDER BOX COVERS • EYEBROW PENCIL HOLDERS • BOTTLE CAPS • JAR CAPS • METAL NOVELTIES TO ORDER

Natural and Aromatic
Raw Materials
Essential Oils

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Alkali trade restriction charged in U. S. civil suit

Filing of a civil suit in the United States District Court for the Southern District of New York charging the United States and the California alkali export associations, thirteen American manufacturers of alkalies, and a British corporation and its American agent with maintaining international cartel agreements to restrain trade in the manufacture and marketing of alkalies, in violation of the Sherman antitrust act, was announced March 16.

Cannot claim product restores original color to hair

Imico, Stevens Point, Wis., has stipulated with the Federal Trade Commission to cease representing that its Polish Water, "Woda Polska" restores the original color to hair, or is a gray hair corrective.

Drops "Restorer" from brand name of hair preparations

By a stipulation with the Federal Trade Commission Walter Gutheim, New York, N. Y., trading under the name of Mrs. E. Vilches, has agreed to discontinue the use of the words "Restorer" or "Restoro" in the brand name of his hair preparations. He also agreed to discontinue the use of the words "Skin Food," "Pore Cleansing" and "Freckle Remover" in toilet preparations offered by him.

M. M. & R. holds annual drug dinner at the Hotel Astor

Drug wholesalers from all over the country, many principals of drug and pharmaceutical houses and 34 members of the trade press were feted by Magnus, Mabee & Reynard, Inc., at a dinner at the Hotel Astor on March 4.

Percy C. Magnus, the M. M. R. president, welcomed the more than 300 guests and called on Charles A. Loring, D.S.C. president, who amused the gathering with several typical Loring anecdotes. Lace I. Gitschen, president of the National Wholesale Druggists Association, gave a brief talk, as did Dr. Ivor Griffith, Dean of the Philadelphia College of Pharmacy and Science.

The dinner was preceded by a cocktail reception. After the dinner, entertainment was provided by featured stars from several popular night clubs and the stage.

Chicago ass'n hears of "chemicals in warfare"

The Chicago Perfumery, Soap and Extract Association, at their March meeting, turned out in force to hear an exceptional program presented by Army and Navy officers on the subject of Chemicals in Warfare.

Through the courtesy of Col. Harry R. Lebkicher, Commanding Officer of the Chicago Chemical Warfare Procurement District, the program was directed by Lt. Joseph Schwimer, Public Relations Officer and chemical expert of that command.

Others participating were Maj. N. H. Fritz, Chemical Warfare Officer of the Sixth Service command, Lt. (j.g.) Stanley Livingstone, a Chemical Warfare Officer at Great Lakes Naval Training Station and Warrant Officer Jas. B. Powers from Great Lakes.

For 1½ hours the Association members were held spellbound by an informal, non-technical presentation of Chemicals at War, and the manner in which the alert chemical branch of our Government has made chemical warfare not only one of the most important phases of our war effort, but a means of saving countless American lives on the firing line.

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Obituary

Bernard M. Douglas, Sr.

Bernard Martin Douglas, Sr., prominent leader in the perfume and toilet goods industry, died on March 16 in the Flower - Fifth Avenue Hospital, after a brief illness. He was 76 years of age.

B. M. Douglas, Sr.

Mr. Douglas was vice-president and director of Bourjois, Inc., and of Chanel, Inc. He was director of R. G. Semler, Inc., and has been vice-president of the Perfumery Importers' Association since its inception in 1914.

Born in Richmond, Va., Mr. Douglas moved to Brooklyn with his family while still a boy. He started his merchandise career with George Borgfeldt & Co., where he remained for 25 years, becoming manager of the Chicago office in 1896 and later head of the firm's toilet goods division.

He enlisted with the National Guard in 1917, and was with the 22nd Engineers, Company F. He was commissioned as a Second Lieutenant in August, 1918, promoted to First Lieutenant the following October, and was made Captain in September, 1920. He acted as Adjutant to the 27th Division Special Troops. In September, 1931 he retired with the rank of Major. Since March, 1941 he had been a Lieutenant-Colonel attached to the staff of the Adjutant General's Office of the New York State Guard.

Mr. Douglas was active in the New York Society of Military and Naval Officers of the world and was a member of the New York Athletic Club.

He is survived by two sons, Bernard M. Douglas, Jr., and Paul H. Douglas. His wife, Julia Hazzard Douglas, died last year.

William G. Volkmann

William G. Volkmann, general manager of A. Schilling & Sons, San Francisco, Calif., died March 22. Mr. Volkmann was long prominent in the spice industry. He was formerly a member of the executive committee of the Spice Grinder's Section, and of the food law standards committee of the American Spice Trade Association. Mr. Volkmann had been a member of the advisory committee of the War Food Administration.

Major Everett W. King

Major Everett Wilfred King, of the 5th Fighter Command, United States Army Air Forces was killed in action in the South West Pacific March 2, according to word received from the War Department by his wife, Mrs. Frances Schang King of Orlando, Florida. Major King was well known in the toilet preparations industry with which he had been connected the greater part of his business life. For many years he represented the Lorscheider-Schang Co. of Rochester, N. Y., in the metropolitan territory. A few years ago he went into business for himself as a packaging expert and among his creations was the redressed Daggett & Ramsdell line brought out a few years ago.

Major King

He was born and educated in Brooklyn where he attended St. John's College. He is a descendant of a soldier of the American Revolutionary War and himself was a veteran of World War I and served in France. Prior to

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that he was with Troop C on the Mexican border. When America entered the present war he enlisted and was commissioned a Captain in the Air Forces two years ago, and for a while was an instructor in flight tactics at the Army Air Forces School in Orlando, Fla.

He is survived by his widow; a son, Everett Lincoln King, an aviation cadet at Moody Field, Ga.; and a daughter, Miss Mary Elizabeth King.

Major King was very well liked throughout the trade and for years served as a member of the Convention Committee of the American Manufacturers of Toilet Articles and its successor associations. By nature he was an artist. His creations in packaging bore the stamp of his genius. He had an attractive home in Norwalk, Conn. which was notable for its rose gardens.

John Zipp

John Zipp, president of the Zipp Manufacturing Co. of Cleveland, Ohio, died March 14 in Sarasota, Fla., where he had gone to retain his health. He was 86 years old.

Mr. Zipp was born in Cleveland, Ohio. He had been head of the Zipp Manufacturing Co., since its inception in 1885. He was formerly the Director of a savings bank, member of the Chamber of Commerce, and belonged to the Tippecanoe Club of Cleveland, and the Early Settlers of Western Reserve.

Surviving him are a son, John Zipp, Jr., his daughter, Mrs. Nellie R. Fisher, a brother Louis, seven grandchildren and three great grandchildren.

Menno A. Vesper

Menno A. Vesper, director of the Field Sales Division of Merck & Co., died in New York City April 2.

Mr. Vesper was a Graduate Pharmacist from the University of Kansas and was actively engaged in the pharmaceutical and chemical fields during his entire career. He joined Merck & Co., Inc., in 1925 and subsequently was appointed to the position which he held at the time of his death.

Thomas M. Finney

Thomas M. Finney, manufacturer of cosmetics and founder of the California Cosmetic Association, was buried in Los Angeles on March 2. He was seventy-three years old and is survived by his widow, Mrs. Jennie M. Finney; a son, Dr. William H. Finney; a daughter, Mrs. A. M. Hansen; and a sister, Mrs. Sallie B. Rhodes.

Charles W. Brown

Charles W. Brown, manager of the Chicago branch of Innis, Speiden & Co., 117 Liberty St., New York, N. Y., died in Chicago March 15. Mr. Brown was born in Crandall, Texas, July 26, 1880, and had been associated with Innis, Speiden & Company since May 1, 1907, and was widely known. Throughout this association he was active in the Chicago and Middle West territory. Mr. Brown attended the Chicago School of Pharmacy and Northwestern University.

Charles L. Bird

Charles L. Bird, since last August the general manager of McKesson & Robbins' Groover-Stewart Division in Jacksonville, Fla., died suddenly on March 14, it is announced by W. J. Murray, Jr., president of the company.

Born in Jacksonville in 1894, Mr. Bird spent 34 of his 49 years in the employ of this wholesale drug firm both before and since its incorporation in the McKesson organization. In 1936 he was made merchandise manager, continuing as such until his appointment as general manager in 1943.

Mr. Bird is survived by his widow, Lucille Kendricks Bird, a daughter and a son.

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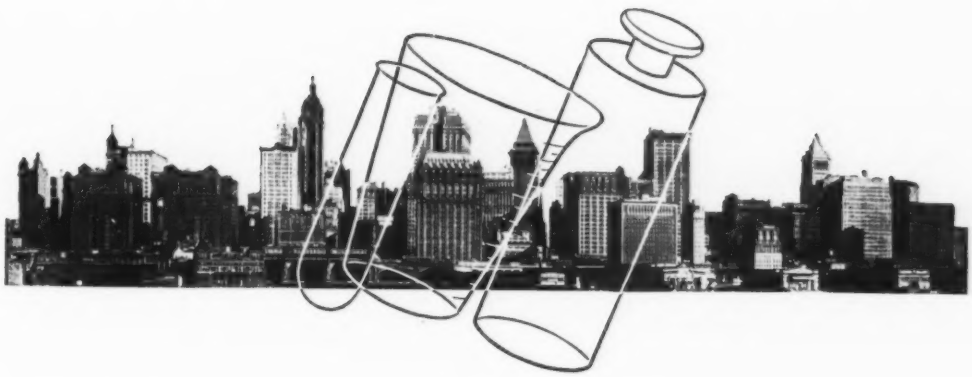

Rise in Prices of Peppermint, Ionones

EXTENSION OF MAXIMUM PRICES on oil peppermint, advances of five to ten per cent in ionone prices, and announcement by the War Food Administration of a temporary suspension of restrictions on the use of glycerine for civilian needs were among a few of the highlights in wholesale markets over the past month.

ADVANCE IN IONONE PRICES

The upward revision in ionones that featured the aromatic chemical market was attributed to increased costs as well as the recent upward trend in oil lemongrass. Other changes noted in chemicals included a series of advances in citral and anethol.

BRAZILIAN MENTHOL MARKET UPSET

The Brazilian menthol market has become highly upset by reports of a possible dollars and cents ceiling on sales prices here and a plan to discontinue the minimum export price in Brazil. Toward the close of last month it was indicated that the Brazilian government was planning to place a ceiling price on exports of menthol of $31 per kilo and that the so-called "floor" price of $29 per kilo, established some months ago, was being wiped out. Several good size arrivals of menthol arrived here over the past month although there are some interests here who say that they have not yet received delivery of goods purchased at the origin some time ago. Reliable shippers in Brazil are refusing to quote prices for forward shipment explaining that there are too many contracts outstanding. Houses in Great Britain receiving direct offers from Brazil state that the quantities involved are fantastic, and that if such quantities are available in Brazil it would seem logical to expect prices would be declining, rather than advancing.

BOIS DE ROSE OIL ARRIVES

Another major development in the market was an arrival of about 480,000 pounds of bois de rose oil, representing an investment of over two million dollars. Prices here fell slightly on the appearance of the new goods but the oil found ready buyers, and a complete reversal in the trend immediately followed.

HIGHER PEPPERMINT CEILING

The new and higher ceilings on peppermint oil did not offer any relief to New York dealers who normally are credited with selling a good portion of the annual production. The reason given in extending the maximum sales prices, was to stimulate production for war purposes, but with ceilings remaining so that it is impossible for New York dealers to sell this major flavoring oil, it is hardly likely farmers will consider producing more oil over the coming season with a portion of their demands remaining virtually cut off.

The new OPA ceiling establishes the maximum producers price for natural oil at $7 per pound. It also sets a dealers' price for natural oil without specifying whether the $7.50 figure applies to a dealer in the country or a dealer in New York. As a result, dealers here are faced with paying $7.50 which is a dealers' price in the country, and which is likewise the maximum price at which the dealer in New York may resell the material. It is also pointed out that it is impossible for dealers to pay $7.50 per pound for natural oil in the country and redistill the product to sell at the maximum figure of $8.05 especially when extra charges are taken into consideration. The new ceilings also lessen the possibility of any menthol being made from American peppermint oil. At the new maximum prices of peppermint oil it would cost at least $28 to $30 per pound to produce menthol from American oil.

GLYCERIN RESTRICTION SUSPENDED

Increased output of fats because of the unprecedented number of hogs which came to market during the early months of the year resulted in a temporary suspension by the WFA of restrictions on the use of glycerin. Quotations on tax paid ethyl alcohol have been adjusted in keeping with the new revenue tax. Users entitled to a draw back on their purchases of ethyl alcohol will have a net cost of $6.20 per gallon. Before a drawback was granted in October, 1942, they had paid $8.12 per wine gallon, hence alcohol purchased subject to a drawback as of April 1, 1944, will actually cost $1.92 per wine gallon less than it did in October, 1942.

DECLINE IN VANILLA BEAN PRICES

Quotations on Mexican vanilla beans have been lowered on reports to the effect that some 100 tons of Bourbon beans which had been purchased some time ago in Madagascar are being shipped to the United States. Although official reports were lacking, it is understood, the beans will go to South Africa. At that point they will be transferred to a steamer leaving that area for the United States. It is likely a further decline will be witnessed in Mexican bean prices now that shippers have learned there is a sizeable quantity of Bourbon beans enroute here from Madagascar.

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Amber, rectified	1.35	Nom'l
Angelica Root	125.00@	150.00
Anise, U. S. P.	3.85	Nom'l
Imitation	1.75@	2.10
Aspic (spike) Span.	4.10@	5.25
Avocado	.90@	.95
Bay	1.60@	1.95
Bergamot	25.00	Nom'l
Brazilian	10.00@	10.25
Artificial	4.00@	9.25
Birch, sweet	3.35@	5.25
Birchtar, crude	2.25	Nom'l
Birchtar, rectified	4.25	Nom'l
Bois de Rose	4.25@	4.75
Cade, U. S. P.	1.50@	1.75
Cajeput	2.00@	2.75
Calamus	22.50@	35.00
Camphor, "white," dom.	.35@	.45
Cananga, Java, native	9.00@	11.00
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Caraway	17.50	Nom'l
Cardamon	28.00@	32.00
Cassia, rectified, U. S. P.	12.00	Nom'l
Cedar leaf	1.20@	1.30
U. S. P.	1.70@	1.85
Cedar wood	.85@	.95
Celery	24.00@	26.00
Chamomile	150.00	Nom'l
Cinnamon	15.00@	32.00
Citronella, Ceylon	1.05@	1.25
Java	3.25	Nom'l
Cloves, Zanzibar	1.50@	1.75
Copaiba	.80@	.85
Coriander	30.00@	32.00
Imitation	10.00@	14.00
Croton	3.00@	3.75
Cubebs	5.25	Nom'l
Cumin	8.50@	10.00
Dillseed	7.00@	7.50
Erigeron	2.15@	2.50
Eucalyptus	1.55	Nom'l
Fennel, Sweet	3.25@	4.00
Geranium, Rose, Algerian	13.00@	15.00
Bourbon	16.00@	18.00
Turkish	5.25@	6.00
Ginger	21.00@	22.00
Guaiac (Wood)	4.50@	6.10
Hemlock	1.50	Nom'l
Substitute	.55@	.60
Juniper Berries	15.00	Nom'l
Juniper Wood, imitation	.75@	.80
Laurel	5.00	Nom'l
Lavandin	8.25	Nom'l
Lavender, French	10.00@	12.00
Lemon, Calif.	3.25@	
Lemongrass	1.45@	1.60
Limes, distilled	7.00@	7.75
Expressed	11.00@	11.75
Linaloe	3.65@	4.00
Lovage	95.00	Nom'l
Marjoram	7.00@	7.50
Neroli, Bigarde P.	300.00@	375.00
Petale, extra	300.00@	340.00
Olibanum	5.00@	5.75
Opopanax	22.00@	38.00
Orange, bitter	4.50@	5.00
Brazilian	1.25@	1.50
Calif., exp.	1.25@	1.50
Orris Root, abs. (oz.)	135.00@	
Artificial	36.00@	40.00
Pennyroyal, Amer.	3.25@	4.10
European	3.15@	4.10
Peppermint, natural	7.50@	
Redistilled	8.05@	
Petitgrain	1.60@	2.00
Pimento	5.25@	8.00
Pinus Sylvestris	4.25@	5.00
Pumillonis	4.25@	4.80
Rose, Bulgaria (oz.)	25.00@	32.00
Synthetic, lb.	45.00@	55.00
Rosemary, Spanish	2.00@	2.10
Sage	6.25@	7.50
Sage, Clary	40.00	Nom'l
Sandalwood, East India	6.25@	6.50
Sassafras, natural	2.00@	2.35
Artificial	1.50@	1.80
Snake root	10.00@	12.75
Spearmint	4.00	Nom'l
Thyme, red	2.60@	3.25
White	3.25@	5.00
Valerian	35.00	Nom'l
Vetivert, Java	45.00	Nom'l
Wintergreen	5.25@	8.50
Wormseed	5.25	Nom'l
Ylang Ylang, Manila	38.00	Nom'l
Bourbon type	18.00@	20.00

TERPENELESS OILS

Bay	2.75@	3.00
Bergamot	49.00	Nom'l
Grapefruit	65.00@	
Lavender	28.00	Nom'l
Lemon	40.00@	55.00
Lime, ex.	85.00@	100.00
Distilled	60.00@	67.00
Orange sweet	75.00@	125.00
Peppermint	12.50@	13.10
Petitgrain	3.50@	4.00
Spearmint	5.00@	6.00

DERIVATIVES AND CHEMICALS

Acetaldehyde 50%	1.90@	2.75
Acetophenone	1.60@	1.75
Alcohol C 8	7.50	Nom'l
C 9	13.25@	15.00
C 10	7.75@	12.00
C 11	11.50	Nom'l
C 12	7.20@	8.50
Aldehyde C 8	22.50@	28.00
C 9	32.00	Nom'l
C 10	22.00@	29.00
C 11	22.00	Nom'l
C 12	25.00@	30.00
C 14 (so called)	9.25@	9.75
C 16 (so called)	7.65@	8.25
Amyl Acetate	.50@	.75
Amyl Butyrate	.90@	1.10
Amyl Cinnamate	4.50@	5.80
Amyl Cinnamate Aldehyde	2.75@	5.00
Amyl Formate	1.00@	1.75
Amyl Phenyl Acetate	3.75@	4.00
Amyl Salicylate	.85@	1.00
Amyl Valerate	2.00@	2.75
Anethol	2.75@	2.85
Anisic Aldehyde	3.15@	4.00
Benzophenone	1.15@	1.30
Benzyl Acetate	.65@	1.00
Benzyl Alcohol	1.80@	2.00
Benzyl Benzoate	1.10	Nom'l
Benzyl Butyrate	2.25@	3.00
Benzyl Cinnamate	5.15	Nom'l
Benzyl Formate	3.75	Nom'l
Benzyl-Iso-eugenol	10.25	Nom'l
Benzylidenacetone	2.25@	3.40
Borneol	1.80	Nom'l
Bornyl Acetate	2.00	Nom'l
Bromstyrol	5.00	Nom'l
Butyl Acetate	.11@	14½
Cinnamic Acid	3.75@	4.50
Cinnamic Alcohol	3.75@	4.00
Cinnamic Aldehyde	1.75	Nom'l
Cinnamyl Acetate	10.40@	12.00
Cinnamyl Butyrate	12.00@	14.00
Cinnamyl Formate	10.00@	13.00
Citral, C. P.	3.75@	4.25
Citronellol	6.50@	7.00
Citronellyl Acetate	8.60@	9.20
Coumarin	3.00@	3.50
Cuminic Aldehyde	8.00@	11.25
Diethylphthalate	.24	Nom'l
Dimethyl Anthranilate	4.55@	5.00
Ethyl Acetate	.25	Nom'l
Ethyl Anthranilate	5.75@	7.50
Ethyl Benzoate	.90@	1.15
Ethyl Butyrate	.75@	.90
Ethyl Cinnamate	3.25@	3.75
Ethyl Formate	.60@	1.00
Ethyl Propionate	.80	Nom'l
Ethyl Salicylate	.90@	1.00
Ethyl Vanillin	5.25@	6.00
Eucalyptol	2.75	Nom'l
Eugenol	2.80@	3.25
Geraniol, dom.	3.50@	4.75
Geranyl Acetate	4.00	Nom'l
Geranyl Butyrate	7.75@	8.20
Geranyl Formate	8.50@	10.00
Heliotropin, dom.	3.50@	6.00
Hydrotopic Aldehyde	15.00@	18.00
Hydroxycitronellal	7.75@	10.00
Indol, C. P.	26.50@	30.00
Iso-borneol	1.00@	1.10
Iso-butyl Acetate	1.25@	2.00
Iso-butyl Benzoate	1.65@	2.70
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Iso-eugenol	4.00@	4.85
Iso-safrol	3.00	Nom'l
Linalool	7.50@	8.00
Linalyl Acetate 90%	8.25@	9.00
Linalyl Anthranilate	15.00@	
Linalyl Benzoate	10.50@	
Linalyl Formate	9.00@	12.00
Menthol, Brazilian	18.00@	24.00
Methyl Acetophenone	1.55@	1.80
Methyl Anthranilate	2.75@	3.00
Methyl Benzoate	.70@	1.10
Methyl Cellulose, f.o.b. shipping point	.60	Nom'l
Methyl Cinnamate	2.25@	3.50
Methyl Eugenol	3.50@	6.75
Methyl Heptenone	3.25	Nom'l
Methyl Heptine Carbonate	40.00@	60.00
Methyl Iso-eugenol	5.85@	10.00
Methyl Octine Carbonate	24.00@	30.00
Methyl Paracresol	2.50	Nom'l
Methyl Phenylacetate	3.75@	4.00
Methyl Salicylate	.35@	.38
Musk Ambrette	9.50	Nom'l
Ketone	4.50@	9.70
Xylene	1.65@	2.50
Neroline (ethyl ether)	2.00@	3.15
Paracresol Acetate	2.50	Nom'l
Paracresol Methyl Ether	2.60	Nom'l
Paracresol Phenyl-acetate	6.50@	8.50
Phenylacetaldehyde 50%	3.75@	4.00
100%	4.50@	5.00
Phenylacetic Acid	3.00@	3.75
Phenylethyl Acetate	3.00@	4.90
Phenylethyl Alcohol	2.50@	3.00
Phenylethyl Anthranilate	16.00@	
Phenylethyl Butyrate	4.00@	4.25
Phenylethyl Propionate	3.90@	5.60

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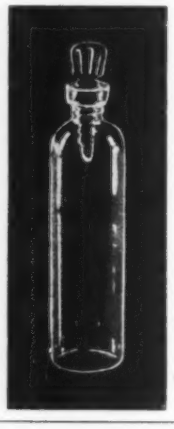

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Phenyl Formate	12.50@	18.00
Phenyl Valerianate	16.00@	17.50
Phenylpropyl Acetate	10.00	Nom'l
Santalyl Acetate	20.00@	22.50
Skatol, C. P. (oz.)	5.35@	6.00
Styralyl Acetate	2.50@	3.00
Styralyl Alcohol	9.25@	12.00
Vanillin (clove oil)	2.60	Nom'l
(guaiacol)	2.35	Nom'l
Lignin	2.35	Nom'l
Vetivert Acetate	25.00	Nom'l
Violet Ketone Alpha	18.00	Nom'l
Beta	15.00	Nom'l
Methyl	6.50	Nom'l
Yara Yara (methyl ester)	3.20	Nom'l

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Tonka Beans, Surinam	.70@	.95
Angostura	2.40@	2.75
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Mexican, whole	9.00@	10.00
Mexican, cut	7.75@	8.25
Bourbon	9.50@	10.00
Tahiti	3.75@	4.00

SUNDRIES AND DRUGS

Acetone	.8½@	.09
Almond meal	.25@	.27
Ambergris, ounce	17.00@	20.00
Balsam, Copaiba	.52@	.54
Peru	1.05@	1.20
Beeswax, bleached, pure		
U. S. P.	.57	Nom'l
Yellow, refined	.52½	Nom'l
Bismuth, sub-nitrate	1.20@	1.22
Borax, crystals, carlot ton	55.50@	58.00
Boric Acid, U. S. P., cwt.	6.95@	7.55
Calamine	.18@	.20
Calcium, phosphate	.08@	.08¾
Phosphate, tri-basic	.09@	.10
Camphor, domestic	.69@	.84
Castoreum	13.00@	26.00
Cetyl Alcohol	1.75	Nom'l
Pure	2.25	Nom'l
Chalk, precip.	.03½@	.06½
Cherry Laurel Water, carboy	5.75@	6.25
Citric Acid	.21	Nom'l
Civet, ounce	28.00@	49.00
Clay, colloidal	.07@	.15
Cocoa Butter, lump	.25½@	.27
Cyclohexanol (Hexalin)	.30@	.50
Fuller's Earth, ton	15.00@	33.00
Glycerin, C. P., drums	.18¼@	.18¾
Gum Arabic, white	.42@	.45
Amber	.13@	.14
Powdered, U.S.P.	.19@	.21
Gum Benzoin, Siam	5.00	Nom'l
Sumatra	1.35@	1.40
Gum Galbanum	1.80@	2.00
Gum Myrrh	.50@	.55
Henna, pwd.	.30@	.35
Kaolin	.05@	.07
Labdanum	3.25@	5.00
Lanolin, hydrous	.35@	.36
Anhydrous	.36@	.37
Magnesium, carbonate	.09@	.10¾
Stearate	.24@	.27
Musk, ounce	50.00	Nom'l
Olibanum, tears	.18@	.35
Siftings	.11½@	.13
Orange Flower Water, gal.	2.00@	2.50
Orris Root, African, pwd.	1.10@	1.15
Paraffin	.06¼@	.09
Peroxide	1.10@	1.75
Petrolatum, white	.06¼	.08½
Quince Seed	1.75@	2.00
Rice Starch	.09@	.10
Rose Leaves, red	3.50@	4.00
Rose Water, gal.	6.50@	8.00
Rosin, M. per cwt.	5.55@	
Salicylic Acid	.35@	.40
Saponin	2.00@	2.50
Silicate, 40°, drums, works, 100 pounds	.80@	1.20
Soap, neutral, white	.20@	.25
Sodium Carb. 58% light, 100 pounds	1.35@	2.35
Hydroxide, 76% solid, 100 pounds	2.60@	3.75
Spermaceti	.26@	.27
Stearate Zinc	.30@	.31
Styrax	1.40@	1.60
Tartaric Acid	.64	Nom'l
Tragacanth, No. 1	4.85@	5.00
Triethanolamine	.34½	Nom'l
Violet Flowers	1.75@	2.00
Zinc Oxide, U. S. P. bbls.	.10½	.10¾

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Castor No. 1, tanks	.13@	
Cocoanut, Manila Grade, c.i.f., tanks	.0835@	
Corn, crude, Midwest, mill, tanks	.12¾@	
Corn Oil, distilled, bbls.	.15½	Nom'l
Cotton, crude, Southeast, tanks	.12¾@	
Grease, white	.08⅞@	
Lard	.1380@	
Lard Oil, common, No. 1 bbls.	.14@	
Palm, Niger, drums	.0865	
Peanut, refined, tanks	.14⅝@	
Red Oil, distilled, tanks	.12½@	
Stearic Acid		
Triple Pressed	.18⅝@	.19⅝
Double Pressed	.15⅞@	.16⅞
Tallow, acidless, barrels	.14¼@	
Tallow, N. Y. C., extra	.08⅝@	
Whale oil, refined	.1232	Nom'l

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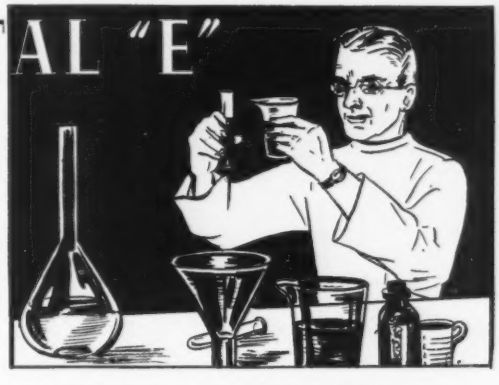

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Production Control and the Analysis of Cosmetics

by MAISON G. DENAVARRE, Ph.C., B.S.

Technical Editor of the American Perfumer & Essential Oil Review and of Elaboraciones y Envases, Special Lecturer in Cosmetics, Wayne University, College of Pharmacy, Consulting Chemist

Second Installment.

The first installment was published in the preceding issue. Subsequent installments will appear in forthcoming issues.

ACKNOWLEDGMENTS

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CHAPTER II

(continued)

Specialized Equipment

A MICROSCOPE WILL TELL if a shampoo washes hair clean or if it leaves a scum on the hair shaft. The effect of permanent waving solutions on hair can also be seen. These are only a few of the things that can be learned with a microscope.

A microscope will show if karaya gum is grossly adulterated with bark or dirt, or if the starch you are looking at comes from rice, corn or potatoes, or if the discoloration on a cream or the fleck or floater in a bottle of liquid is dirt or mold growth.

A common phrase heard among technicians when looking at a material or product is "let's see what it looks like under the microscope." However, before buying one, discuss your need fully with the supplier or you may spend a lot of money for a microscope that doesn't serve your entire needs. Remember, it is better to spend the extra few dollars for something from which you can get much use, rather than to pay less and be hampered in your work.

Examinations under polarized light may be made on an ordinary microscope by using an inexpensive Polaroid attachment (Figure 11) costing around ten dollars. An analyzer fits over the eyepiece while the polarizer fits below the condensing lens on the substage. The device fits any type of microscope. With this added feature, the microscope becomes a still more important tool because materials may look a lot alike under ordinary light, but will appear differently under polarized light.

ELECTRON MICROSCOPE

The electron microscope recently devised gives a thirty fold increase over the usual confines of the conventional

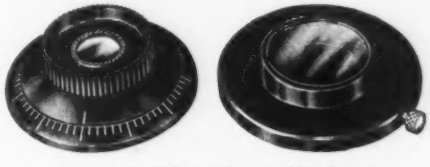

Figure 11. Fisher Polarizer Attachment

microscope which is not the limit of its possibilities. The instrument has been developed by the Radio Corporation of America and is shown in Figure 12. While 50,000 magnifications is common, it is possible to get as much as 100,000 magnifications in some cases. Further, refinements will undoubtedly carry the enlargement further. With this

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new device, science and industry are learning more about the "shape of things" as they really are. Figure 13 shows magnesium oxide at 55,000 magnifications. Many cos-

Figure 12. Electron Microscope

metic phenomena will be more understandable when submitted to this great increase in size during study. At present, the illustrated instrument costs almost a fortune,

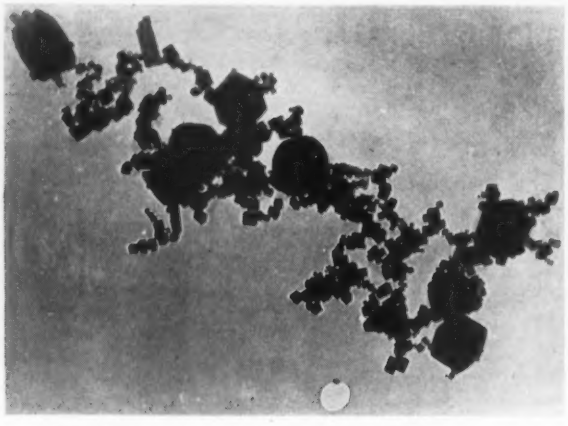


Figure 13. Magnesium Oxide at 55,000 magnifications

although a smaller one, costing less, has been also devised. Nevertheless, both are still out of the reach of available cosmetic research funds.

A simple binocular giving from four to ten magnifications has recently been made. It fits on like a pair of glasses. Instead of hooking on the ears, it is strapped to the head. The unit is cheap and is good for a variety of microscopic examinations.

A microprojector enables the operator to show on a screen, objects and phenomena taking place on the slide of an ordinary microscope. Audiences can view the pro-

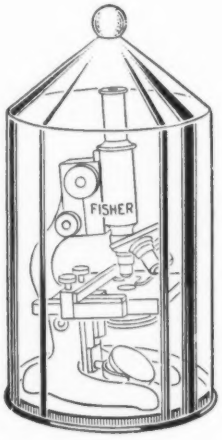


Figure 14. Fisher Microscope Cover

jection like a movie. It is especially adapted for drawings and study.

LIBRARY OF THE FUTURE

Microfilm and projectors will be the library of the future, just as V-mail is the fastest military mail. Books so rare as to exist in but one or two libraries of the world

Figure 15. Photomicrographic Setup

may now be photographed on 35 mm film and be shown as stills on a viewer-projector, enlarged to the size desired. Not only books, but journals, pictures and other objects

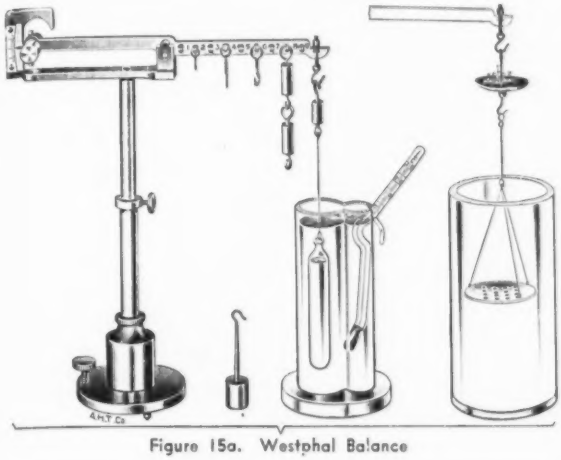


Figure 15a. Westphal Balance

may be similarly photographed and projected. Already today, the U. S. Department of Agriculture Library in Washington will take a microfilm of any article appearing in journals in their library for a flat fee of fifty cents per article regardless of length. The author has used this service many times. It is economical and extremely convenient.

The microscope should be protected from dust by a

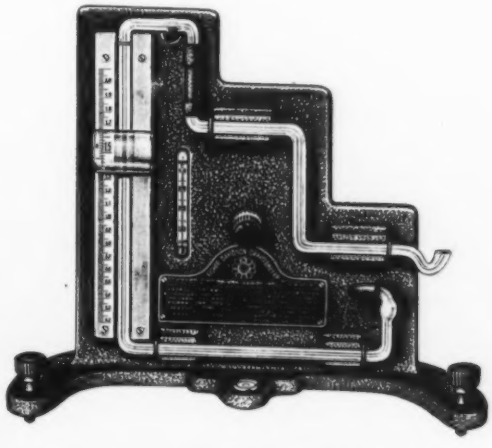


Figure 15b. Fisher-Davidson Gravitometer

cellulose plastic cover. Such covers are available in many models and sizes. One is shown in Figure 14.

It is often desirable to make a permanent record of an object seen under the microscope. To do so, it requires special equipment. For best results, a set-up similar to the one in Figure 15 should be used. More elaborate equipment is available, especially for taking larger pictures.

A special inexpensive camera without a lens is available, too. It is attached to a rigid stand. A focusing tube at the side of the camera rests on the eyepiece; the microscope is manipulated to bring the image into sharp relief; the camera is then swung over onto the eyepiece and the exposure made on Eastman #127 film or its equivalent. It takes a little study to get such a unit to work right, but it does give pretty fair results. This camera and stand sell for around fifteen dollars.

SPECIFIC GRAVITY

At some time or other in every laboratory, the chemist is called upon to determine the specific gravity of either a raw material, a special distillate or a finished product. There are a number of ways to do it. Some of them are briefly reviewed here.

Commonest among the methods is the use of a hydrometer. It comes graduated from 1000 to 2000 for liquids heavier than water, and from 1000 to 700 for liquids lighter than water. The instrument is simply floated in a cylinder of the liquid at some predetermined temperature and the distance to which it sinks in that liquid is read from the stem markings.

A Baumé hydrometer is well known in certain fields such as in soap manufacture. The scale readings can be changed over to specific gravity through a formula for either lighter or heavier than water liquids.

The pycnometer or specific gravity flask is widely used by technicians for determining specific gravity. The flasks come in sizes from 10 to 100 ml. Fundamentally, the specific gravity is obtained by taking the weight of the liquid under test (at a fixed temperature) and dividing it by the weight of the same volume of water at the same temperature. Thus, if the flask holds say 30 grams of glycerin at a certain temperature and only 24 grams of water, $30 \div 24 = 1.25$, the specific gravity of glycerin. Water insoluble powders can also be checked in this manner.

There is another easy and accurate method using the Westphal Balance (Figure 15-a). The specific gravity of a solution can be determined to the fourth decimal place with this instrument.

The Jolly balance is also finding wide use for quick determination of specific gravity, particularly of rubber.

Recently, the Fisher-Davidson Gravitometer (Figure 15-b) has been developed for measuring the specific gravity of liquids ranging from 0.60 to 2.00, using but 0.3 ml of sample. It employs a well known hydrostatic principle giving direct readings on a scale.

Two capillary manometers are held on the Gravitometer support and connected so that an integral suction pump causes air pressure to raise liquid levels in the manometers. A liquid of known density is introduced into an L-shape capillary and the liquid of unknown density into a Z-shape tube. Suction raises the unknown liquid to a fixed height so that it is balanced against the known liquid in tube L. The height to which the L column rises is in keeping with the specific gravity of the unknown; this height is read directly in specific gravity units on the engraved scale.

HEATING

Practically all buildings are equipped with natural or artificial gas. A Bunsen or Meker type gas burner is standard equipment in every laboratory, large or small. Each has its job to do. The Bunsen type is an all purpose burner, while the Meker burner is intended for ashing, ignitions and any other operations requiring higher temperatures. Approximate maximum temperature from a Bunsen flame is 1500°C. while the Meker flame goes to 1700°C.

Electrical heating can do many jobs better than gas heating, particularly if inflammable liquids are being handled. There are many varieties and sizes of hot plates from which to select the one desired. A small frying pan type is an inexpensive and compact unit, 4 inches wide, thermostatically controlled up to 750 Watts. A larger and different kind is about double the price of the above unit. Both are shown in Figure 16.

Figure 16. Frying Pan Type Hot Plate and Larger Model

Slow heating, temperature maintenance in large or small quantities of materials, evaporations and for regulated heating of reaction vessels, an electrically heated unit is the wisest choice.

Large electrical hot plates or batteries of them are available for laboratories doing large scale analytical work. The electrical unit is preferred to the gas unit because of less hazard involved, although it may cost more to operate.

Figure 17. Ashing Furnace

While it is possible to ignite precipitates or ash a sample of material in a Meker flame suitably protected by a tile burner guard, better results may be obtained with a small ashing furnace. The least expensive unit that gives double duty is a Ful-Kontrol dial operated heater equipped with a ceramic-insulated-metal protected cover that fits directly over the heater top, allowing the ashing of from one to four crucibles, depending on size. The temperature is controlled as in an ordinary furnace. When not in use as an ashing furnace, the heater can be used for any other operation requiring electrical heat.

A midget ashing furnace selling for less than fifty dollars with a muffle size of 4 x 3¾ x 3¾ is shown in Figure 17 which will accommodate 6 tall form #0 crucibles. The temperature is controlled by a Pyrometer and Rheostat, operating on the usual 110 volt electric line. A still cheaper unit is shown in Figure 18. Its maximum temperature is only 850°C. Inside diameter is about 4½ x 4½ inches.

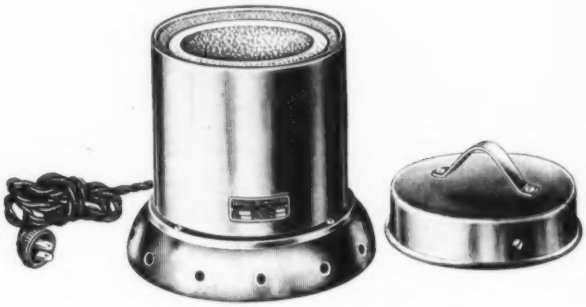


Figure 18. Ashing Furnace

Among the products best ashed at temperatures higher than can be obtained with a Meker burner are the silicates, phosphates and metal oxides.

An item commonly found in the laboratory hood is a Kjeldahl unit, either gas or electrically operated. As everyone knows, this unit is used to change nitrogen compounds into ammonia compounds in an acid media. The ammonia is distilled (after alkalizing the solution) directly into a standard sulfuric acid.

If the hood or laboratory is full of corrosive fumes, the electrical unit may not last as long as a gas unit. Both the gas or electrical unit come in different sizes, although 6 burners or heaters are more or less standard. It will often outlive the user.

Kjeldahl digestion and distilling units serve other purposes than to determine nitrogen containing compounds. Various digestions, evaporations and distillations can be carried out with them. Even under rough treatment such as they get in colleges, the equipment lasts many years. Its only drawback is its size.

The small two unit apparatus shown in Figure 19 is the answer for most laboratories of the cosmetic industry. It can do all the nitrogen work and take up very little space. The illustrated unit operates on the light switch and is heated with two 550 watt heaters. Gas heater can be supplied if needed. The unit sells for around fifty dollars.

Recently, Hengar tubes have been devised to use in conjunction with Kjeldahl flasks during digestion. The

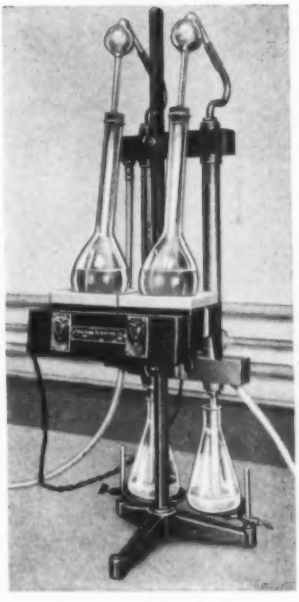


Figure 19. Two Unit Electric Kjeldahl

flask is stoppered with the tube shown in Figure 20, by first winding with sufficient tape to make a tight joint with the neck of the flask. The Kjeldahl flask is then charged with the digestion mixture and the Hengar tube is inserted

Figure 20. Hengar Tube

in the neck. A few porous granules supplied with the Hengar tube are added to the digestion mixture to prevent bumping. The stoppered flask is then clamped at an angle and heated with a Bunsen flame for about 15 minutes or until digestion is complete and frothing subsides. At this point, the flame is raised and the bottle brought to a boil to cause all steam to escape. When the moisture is gone, the Hengar tube is removed and the Kjeldahl reaction is completed in the usual fashion, or a Hengar distilling unit. (Figure 21.)

The advantage of the Hengar tube is that it permits digestions in the open laboratory without the danger of fumes. Both macro and micro digestions can be carried on outside of a hood. The Hengar tube is a porous, ceramic-like device that is used as a stopper in conjunction with paper tape. With this tape, an air-tight, fume-tight joint is obtained. The life of the tube is limited only to accidental breakage.

For small Kjeldahl digestions, it is undoubtedly possible to adapt the Brown-Benotti digestion on tubes shown in Figure 22. Straight tubes would allow loss of material due to foaming or bumping, but in this patented 35 and 50 mm. tube, the bend prevents drops of boiling solution from shooting out. The solution must necessarily strike the wall of the tube along the lines "a" and "b" and flow back into the solution. Foam climbs between the points "a" and "b" and descends between the points "c" and "d".

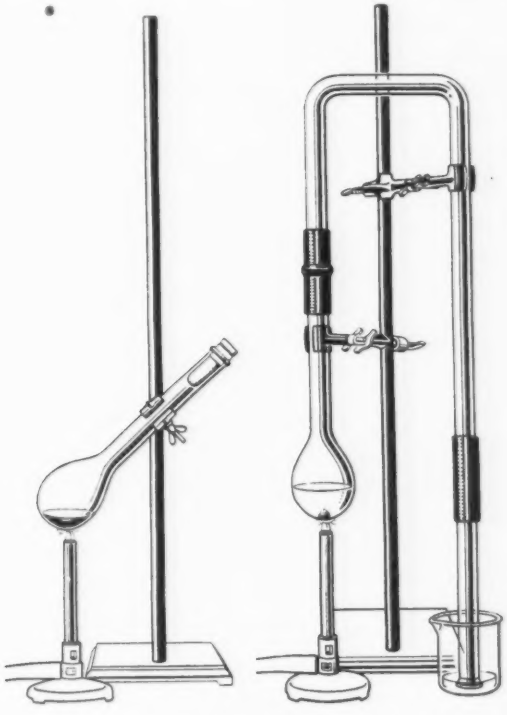


Figure 21. Hengar Distilling Unit

Seldom does it rise beyond "b". Difficult digestions may be accomplished with a simple technique described in *Science*, **94,** *No. 2440, p. 331* or *J. Lab. & Clin. Med.* **27,** *No. 11, p. 1444.* The Brown-Benotti tubes cost only a

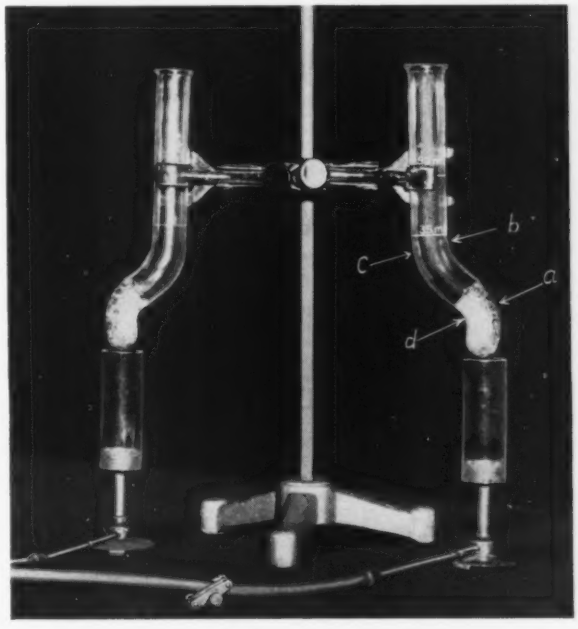


Figure 22. Brown Benotti Tubes

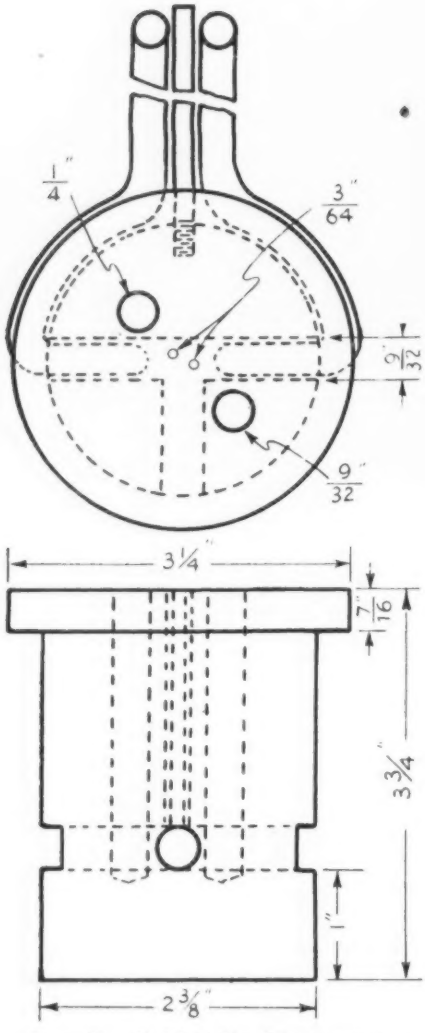


Figure 23a. Kodak Melting Point Apparatus

Figure 23b. Kodak Melting Point Apparatus

little over a dollar each. They can be a part of any laboratory.

ASPIRATOR SET-UP

Another device taken from the physiological chemist is the aspirator set-up used in the Van Slyke-Cullen Urea apparatus. Washed air is passed through the solution under test to remove the ammonia before the other interfering amino compounds are determined. The ammonia is caught in a tube of standard acid. Thus, a quite accurate ammonia value can be obtained in the presence of the other substances. For details, see under Chemical Methods for Ammonia.

MELTING POINT

Heating in one form or another is used to determine the melting point of compounds. The Eastman Kodak Research Laboratory (*Synthetic Organic Chemicals* **10,** No. 2, April 1937.) has developed a unique device (Figure 23) that they use in their work to check the hundreds of chemical compounds they make and sell. The writer has one of these units in his laboratory and can attest to its usefulness and ease of operation.

A more expensive and recent innovation is the electrical method of determining melting points as shown in Figure

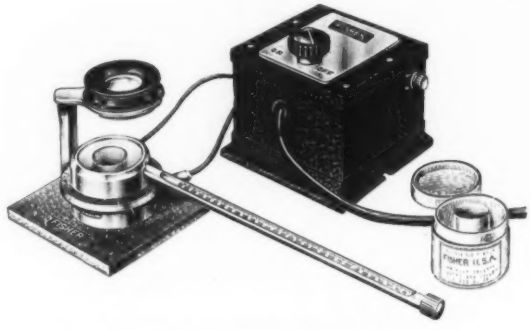


Figure 24. Fisher Electric Melting Point Apparatus

24. It takes no special skill to operate this apparatus. It is accurate.

DETERMINING CONSISTENCY

Consistency is the thickness or thinness of a substance. If liquid, the consistency is described as viscosity, but if solid, its consistency is described as easy or hard to penetrate and is determined on an instrument called a penetrometer.

Viscosity may be determined in a number of ways. Thus, for comparatively thin hand lotions and other liquids, it is the custom to allow 100 cc. of the product to run out of a pear-shaped pipette with a special bore while timing with a stop watch (Figure 25). The timing will vary with the pipette. Hence the same pipette must be used each time. If broken, a new pipette may be calibrated on an earlier sample of known viscosity. The new reading will give a factor when compared to the old reading. All new readings will be multiplied by this factor to keep them in line with former results. Thus readings for an ordinary quince type of almond hand lotion will vary from 90 seconds to 150 seconds, depending on the brand. A plus

or minus five per cent from these readings on any brand indicates a pretty good control of viscosity. A ten per cent variation is not uncommon.

MOBILOMETER

A mobilometer is a more expensive version of viscosity testing apparatus, originally designed for testing paint or

Figure 25. Stop Watch

lacquer (Figure 26). It may be equipped with a water jacket. Plunger disks of different sizes and kinds are used for fluids of more or less thickness, as the case may be. This writer has used a mobilometer with good results for

Figure 26. Mobilometer

a number of years when testing products such as liquid creams of all types, oils, waving fluids and semi-solid creams. In use, the cylinder is filled with product under test, temperature adjusted and maintained by a water jacket, a weight is placed on the top of the plunger pan; simultaneous with the release of the button holding the plunger, a stop watch is set off. The number of seconds it takes for the plunger to hit bottom is noted together with the temperature. This constitutes the viscosity. In practice, the two best of three runs is used as an average and noted.

VISCOSITY TUBES

Many fluid substances are checked by what is known as the bubble method or viscosity tube. It is probably the oldest method of testing viscosity, something like turning a bottle upside down and noting how fast the air bubble goes up.

In actual use, the viscosity tube is carefully made to have the same inside diameter throughout, which is usually ½ inch, while the 4½ inch length is more or less standard. The tubes are then filled to a predetermined height with substances of known viscosity. Usually these tubes are sold in sets of up to 20 tubes (Figure 27). They

Figure 27. Bubble Tubes

range from, say, 0.50 to 5.50 poises and so on for each set. The fluid of unknown viscosity is placed in a rated tube, filled to the height of the standards, corked and brought to the same temperature. The set of tubes and unknown are placed in a holder and inverted at the same time. Compare the speed of bubbles of standard with unknown. The first trial will eliminate most of the tubes. Then the unknown and two tubes with the nearest rate of bubble rise are compared for a more exact figure.

FALLING BALL METHOD

A variation of the bubble viscosity tube is the Hoeppler Falling Ball Viscosimeter. Industrial models range from 0.6 to 100,000 centipoises with an accuracy of one per cent; precision model range is 0.01 to 1,000,000 centipoises with an accuracy of 0.1 per cent. This range and accuracy is accomplished by the use of precisely made balls and precision bore tubes. The glass tube is jacketed. The assembly stands at an angle of 10° from vertical thus insuring a straight path of fall for the ball resulting in a constant area of fluid between the ball and the tube (Figure 28). Measurements are made by accurately timing

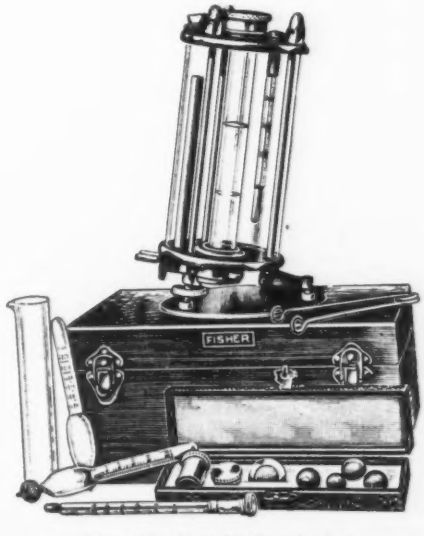


Figure 28. Hoepler Viscosimeter

the fall of the ball between two marked points on the glass tube. The time required for the ball to fall this distance is multiplied by a factor, the specific gravity of the fluid and the test temperature. It takes a 30 ml. sample and only a half minute to perform the test. The operator needs no special skill or experience to use the instrument. An industrial model sells for just over a hundred dollars.

Mucilages of tragacanth, sodium alginate and karaya gums are among a few of the things that do not test out well in this instrument because the falling ball tends to

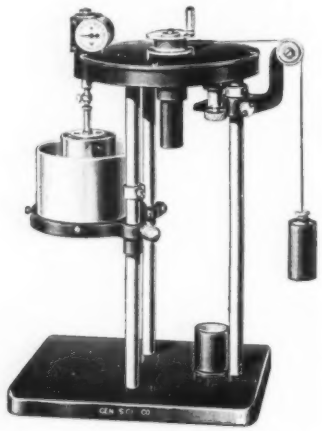


Figure 29. Stormer Viscosimeter

form a rut, thus giving different values each time the test is re-run. In fact, any product or material that has gel-like properties tends to give erroneous results. Only true solutions not subject to thixotropic variations should be tested; they may be as thin as air or as thick as to just pour through a 16 mm. opening.

There are a number of other kinds of viscosimeters, one of which is shown in Figure 29. The illustrated model is the improved Stormer Viscosimeter. Viscosity is determined by measuring the speed attained by a cylinder of rotor immersed in the material under the influence of a constant weight. By varying the weight, a large range of viscosities may be measured. Besides this, there is the Engler, Saybolt and Universal types which are also in use. Their principal is pretty much the same, although their design may be different.

OTHER METHODS

An industrial viscosity tester has been developed by one of the electrical companies for quick and reasonably accurate testing of paints, oils and syrups. The viscosity is determined by the time required for the liquid to flow from a cup through an opening of precise dimensions.

The testing viscosity by the methods thus far described, the product must be fluid to be tested. If it is a solid, other means must be developed. The best method so far devised utilizes the penetrometer (Figure 30). The cone used may be varied in weight and shape.

All things being constant, the results are readily reproducible. It takes a different sample each time and as a result, several samples must be set aside for just this test.

Many consistency tests for soft to solid products have been described in the literature. Most of them have not been worked out enough to become widely used. Thus, in one test, an open collapsible tube of the product in question is allowed to drop from a predetermined height. It is brought to a sudden halt by a fixed collar a few inches above a paper. The amount of material dropping out on the paper is then weighed and noted. Arbitrary figures are then set up for the desired consistency.

In another test, the material is also tubed. The cap is removed and a force is applied in the form of weights. The weight required to cause ejection of the material or the amount ejected under a fixed weight is noted and constitutes a check on the consistency.

In still another test, a square four ounce clear glass jar is half filled with the product. It is brought to the correct temperature, then the jar is laid on its side. The time required for the material to level to a predetermined angle determines the consistency.

Undoubtedly, many other methods are in use. They may be very efficient in the hands of particular technicians, or for testing special products.

SURFACE TENSION

There is a relationship between viscosity, consistency and surface tension, but it is of no concern here. Ordinarily, surface tension refers to the force at the surface of a liquid and air. When two immiscible liquids are involved, the force required to pull a ring through the interface of the one into the other it is called interfacial tension.

Figure 31 shows a DuNouy tensiometer using the ring principle for determining interfacial and surface tension, phenomena of tremendous value in emulsification, foaming and detergency. The instrument consists essentially of sensitive torsion balances applying slowly increasing upward force to an accurately constructed platinum iridium

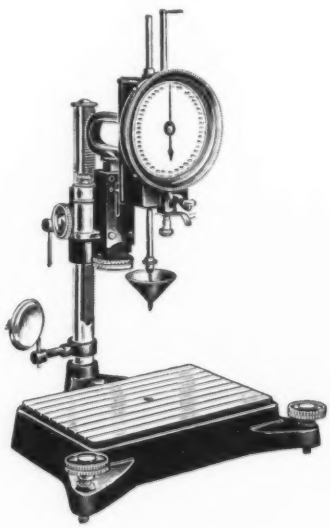


Figure 30. Penetrometer

ring in contact with the surface (or interface) of the liquid under measurement. The amount of upward force exerted is measured on a circular, graduated scale, which when calibrated gives reading in dynes of force, the system of denoting surface tension.

Humidity is the moisture in the air and is measured by a hygrometer, either of the direct reading type or one

giving wet and dry bulb readings that can be converted to relative humidity.

Humidity has wrecked more products than one suspects.

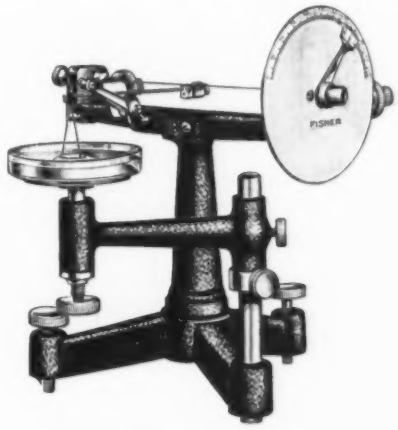


Figure 31. Tensiometer

In one case, a manufacturer of chemical heating pads used in permanent waving lost thousands of dollars because of humidity. The moisture caused the pads to slowly give off heat to the point that when they came to the beauty shop, the pad had lost practically all of its heating ability. So, chemical heating pads of all kinds are now packed in moisture proof containers of one kind or another.

One powdered mouthwash that was on the market a number of years ago was withdrawn because of the havoc played by humidity. Many effervescent products have "gone wrong" because of atmospheric moisture. Hair rinses will stain the envelope unless the paper is moisture proof. These are only a few of the difficulties encountered due to humidity.

CENTRIFUGE

The easiest way to separate solids dispersed in liquids, or emulsions, is to centrifuge them. The lighter material comes to the top, while the heavier substance goes to the bottom.

Figure 32. Centrifuge

Figure 32 shows an inexpensive centrifuge that can be used in both analytical and control work. A minimum of 1600 r.p.m. is desired, while 3000 r.p.m. is still better for emulsion control.

In determining the stability of emulsions, the new emulsion of unknown stability is centrifuged at a fixed number of revolutions per minute, for a definite period of time. The amount of separation is then noted and compared to emulsions of known stability. Some emulsions will show separation in five minutes at 3000 r.p.m. while others will show no appreciable difference after 30 minutes of centrifuging.

VACUUM

Analytical procedures require vacuum to either hasten the work or to enable it to take place at lower temperatures. An aspirator that can be attached to the ordinary water tap gives satisfactory results for filtering operations. Lower vacuum can be obtained with an inexpensive

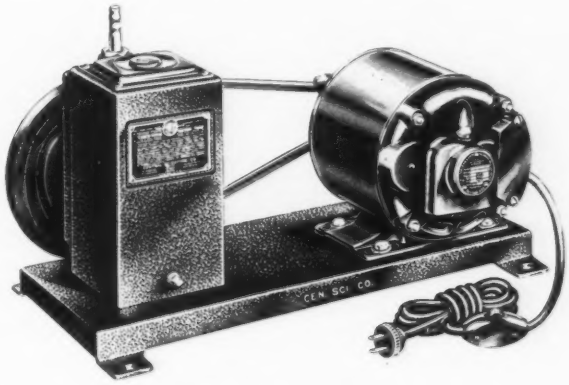


Figure 33. Vacuum Pump

pump such as shown in Figure 33. The pump sells for around seventy-five dollars and lasts a lifetime.

Tightness of closure fit can be determined by placing the capped jar or bottle in a vacuum dessicator and observing the results. Effect of high altitudes on shipments may thus be duplicated in the laboratory. Creams in particular often leak out of a jar when shipped over high mountain ranges. This is the way to find out what will happen to a product before it is shipped.

SPECIAL GASES

It is no longer necessary to have a large and smelly Kipp generator handy to make a little hydrogen sulfide gas. Simply use an *Aitch-Tu-Ess* cartridge and heat. A five gram cartridge (Figure 34) liberates 1250 cc. of H_2S. Hydrogen sulfide is liberated as long as you keep heating. Isn't that a real advantage?

Carbon dioxide and nitrogen are sometimes needed for special operations or tests. A small cylinder can be bought from any scientific equipment supply house for only a couple of dollars. Other gases can be also obtained in this way.

ELECTRICAL METHODS

Under this heading will be briefly discussed a few of the newer methods of analysis and control that have either been used or may be used in cosmetic work. Other methods utilizing electricity could also be considered here, but it was thought more convenient to arrange the present divi-

sion. In practically all cases, it will require an expert to work with these advanced instruments.

SPECTROGRAPHIC ANALYSIS

A spectrograph is essentially an optical instrument that analyzes light from an electric arc. "Thus, when a material has been rendered self luminous by means of an elec-

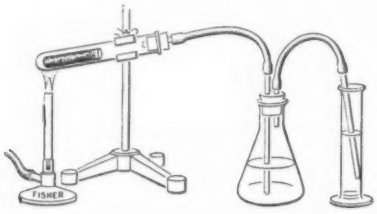


Figure 34. Aitch-Tu-Ess Apparatus

tric arc the light emitted is characteristic of the metallic elements present in the material. For each element present, there are characteristic wave lengths or groups of wave lengths, distinguishable from those of all other elements. When a narrow slit is illuminated with this light, an image of the slit may be produced at some other point by means of a lens or mirror. If the light forming the image is refracted by a prism of glass or other transparent material, the angle through which the light is refracted or bent depends on the wave length of the light. If there is only one wave length, there will be only a single image; if there are many wave lengths, there will be as many images of the slit as there are wave lengths, all parallel to each other, and arranged in a pattern which depends on the wave lengths present, their relative intensities and the nature of the refracting material. This pattern of slit-images is called the spectrum of the light source. A spectrum may be produced in a more direct way than with a prism and lens system by means of a concave diffraction grating.

"The spectrum thus produced may be observed with a magnifying lens, or directly on a screen, or it may be permitted to fall on a photographic plate or film. When the latter is developed, it bears a permanent image of the spectrum. This photographic record is called a spectrogram. When the components mentioned are arranged to make possible the photographing of spectra, the arrangement is called a spectrograph. If the spectrum is formed by refraction in a prism, it is a prism spectrograph; if by a diffraction grating, a grating spectrograph."

A spectrograph may be used for qualitative and quantitative analysis. For the latter kind of work, accuracy is greatest when the concentration is lower than one per cent; if higher than five per cent, ordinary chemical methods are better. Regardless of concentration, qualitative analysis may be carried out spectrographically. The complete unit costs about seven hundred dollars or so.

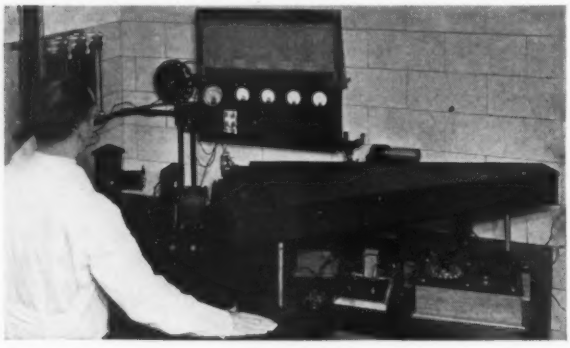


Figure 35. Spectrographic Set-Up

SPECTROPHOTOMETER

A spectrophotometer is an instrument that measures the spectral absorption of a substance under test. A set-up used in testing solar transmission of sunburn preparations appears in Figure 36.

The carbon or mercury arc emits ultraviolet light. Selected wavelengths are allowed to pass through a cell containing the product under test and the per cent transmission is noted. This is done for each wavelength used. The results are then graphically shown. Thus a mixture of one per cent isobutyl para-aminobenzoate and five per cent menthyl salicylate in a cell 0.07 mm thick shows the following per cent transmission:

WAVELENGTH, MILLIMICRONS	TRANSMISSION, PER CENT MEASURED	SPECIFED
289	0.0	5.0 Max.
297	0.0	5.0 "
302	0.0	5.0 "
313	2.5	5.0 "
334	20.0	
365	85.5	50.0 Min.
405	84.5	50.0 "

It requires an expert to run this instrument, too, and as a result, practically everyone in the industry sends their

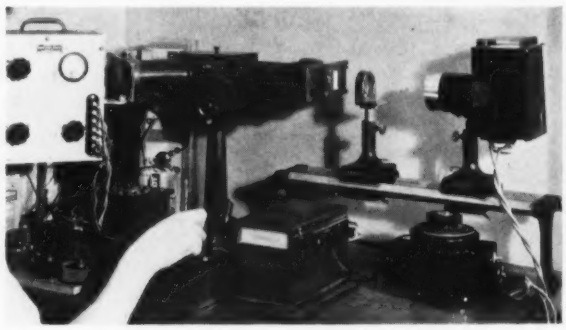


Figure 36. Spectrophotometer

work to one commercial laboratory that specializes in this type of analysis.

A variation of the spectrophotometer is the Orelup Radiometer which utilizes actual sunshine at high noon. The light passes through a cell containing the substance under test finally impinging on a special titanium photo-electric tube, sensitive to energy in the region 2800-3340 A° units. The sensitive microammeter picks up the amplified current generated and shows it on the dial. From this reading the per cent transmission is calculated.

POLAROGRAPH

The polarographic method was originated by Heyrovsky and Shikata about 1922. It is essentially an analytical method based on current voltage curves and relies principally on the dropping mercury electrode to provide a completely polarized electrode in conjunction with one which is not polarizable.

Figure 37. Polarograph

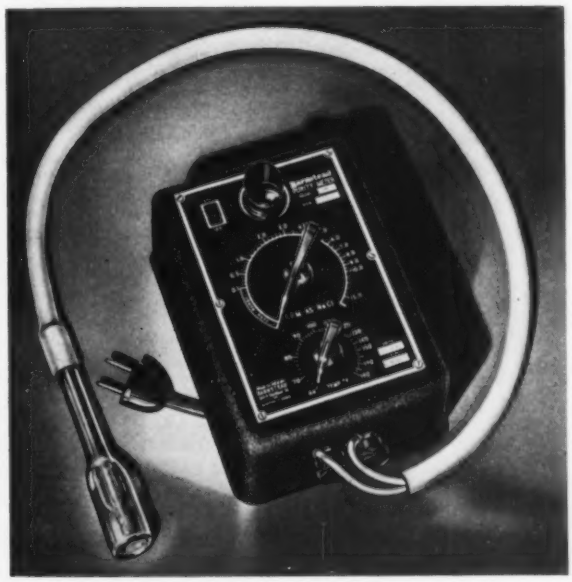


Figure 38a. Barnstead Purity Meter

There are a number of conditions that must be fulfilled for a quantitative reaction. There must likewise be established a sequence of separation. It is quite a complicated instrument to operate, requiring a specially trained expert. The instrument shown in Figure 37 sells for about six hundred dollars or so. It is used both in analysis and production control.

CONDUCTIVITY BRIDGES

In the last few years, an instrument operating on electrochemical principles has become available for control and research work. While there is available a general purpose instrument covering measurements from 0.2 to 250,000 ohms, including in this scope purities varying from distilled water to concentrated alkalis or acids, special units have been devised with somewhat narrower ranges for special duty. One unit, Figure 38, tests the purity of distilled water.

This is called a *purity meter*. No special training or skill is necessary to operate this instrument. It reports water purity directly from a dial and is calibrated from 0 to 15 p.p.m. (sodium chloride).

Other units are made for testing purity of laundry water, ash content of syrups, caustic in washing bath and numerous other operations involving water and dissolved impurities.

ELECTROMETRIC TITRATIONS

The recent instruments employ the latest developments in electronics. The method of operation is based on the titration of oxidation-reduction, conductivity and hydrogen-ion reactions. Principally, electrometric titrations are used in oxidation-reduction reactions. The results are more accurate and takes less time to perform the determination.

One of the units in use consists of the titration stand, a qualitative unit and a quantitative unit. The titration stand and qualitative unit are used for oxidation-reduction titrations. The quantitative unit is used with the titration stand for pH titrations, quantitative conductance, voltage or resistance measurements. Several makes are on the market.

ULTRAVIOLET ANALYSIS

Figure 40 shows two of several inexpensive types of ultraviolet lamps that can be used in laboratory work. The use of ultraviolet fluorescence in qualitative and quantitative analysis is well known. In fact a book has been written on the subject.

Different materials have a specific fluorescence in ultraviolet light. This difference is not always easy to discern

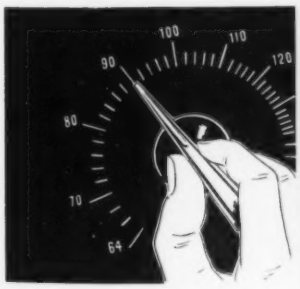
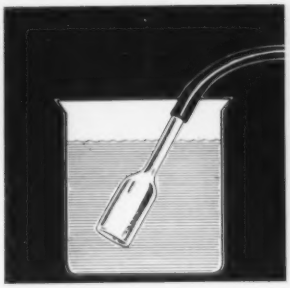


Figure 38b FIRST—
Set the temperature



SECOND—
Insert the Drip Cell

THIRD—
Adjust to widest shadow

FOURTH—
Read as p.p.m.NaCl.

by the inexperienced observer. It is similar to describing any of a half hundred shades of some color such as pink. Yet in the hands of the well initiated, ultraviolet light is truly an analytical tool.

One of its uses is the determination of the presence of a *tracer* in a product. Under ordinary light the tracer cannot be seen. Exposure to the ultraviolet light immediately shows up the tracer by its particular fluorescence. The tracer need only be used in a very small amount to be so detected. The purpose of tracers is to make sure that all samples of one manufacturer's label are really of his make. This

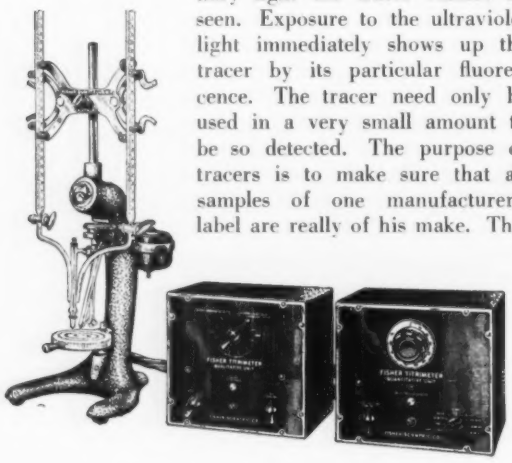


Figure 39. Fisher Titrimeter

is no idle dream, for counterfeiting has been found many times, although it is not easy to establish it without a tracer. (One recent court case utilizing a tracer involved a well-known brand of silver nucleinate sold at a higher price than the regular material that could be bought for considerably less. The presence or absence of the tracer in the advertised brand proved the substitution.)

Essential oils and perfume compounds will manifest a particular

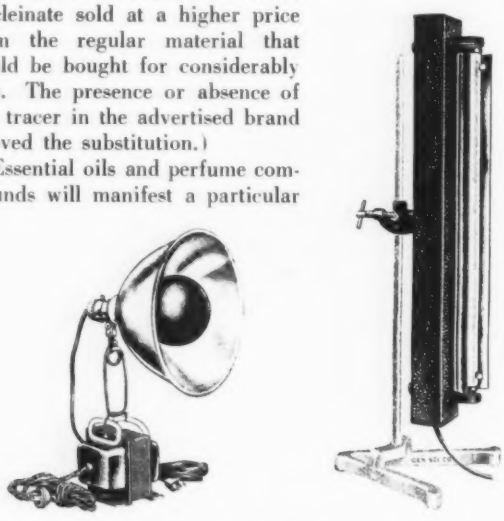


Figure 40. Ultraviolet Lamps

fluorescence in ultraviolet light that is characteristic of the substance. If a batch does not show the usual fluorescence, adulteration or substitution may be suspected.

PILOT PLANT

Chemical reactions developed in the laboratory cannot be directly translated into production. Variations occur when the batch size is increased. This variation is determined in a pilot plant which is nothing more than a small version of a regular operating plant. All equipment is of midget size, duplicating large-scale operations in every detail.

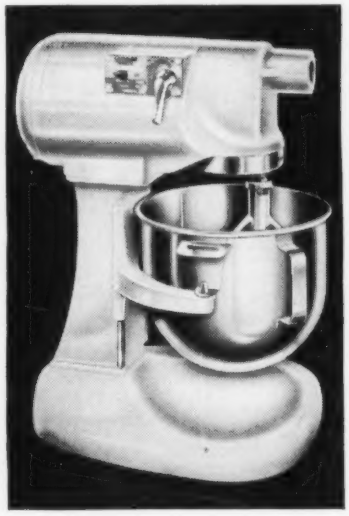


Figure 41. Hobart Mixer

In cosmetic work, a pilot or midget plant is also indispensible. It should consist of a planetary mixer as shown in Figure 41, a push-pull portable agitator suitable for batches of one gallon to five gallons, a gallon size colloid mill, a small hand-powered or electrically-operated homogenizer, a gallon size ointment mill, a five gallon size pony

Figure 42. Fisher Midget Roller Mill

mixer, a midget roller mill for grinding pigments and colors, a pulverizer of the smallest size available, and a ball mill similar to the tiny laboratory model illustrated in Figure 42.

Individual laboratories may not need all of the items listed above. Some may need even more. Special need may exist for a dough type mixer, water still, zeolite water softener, miniature asbestos disc filter, lip and other stick molding apparatus to name only a few additional items.

OTHER EQUIPMENT

Still other equipment is used for special analytical or production control work. It will be mentioned and illustrated under the respective products as they are considered.

(Continuing chapters in subsequent issues)